ICD08274 JAN. 1983 VOL. 1 NO. 3

$2.50

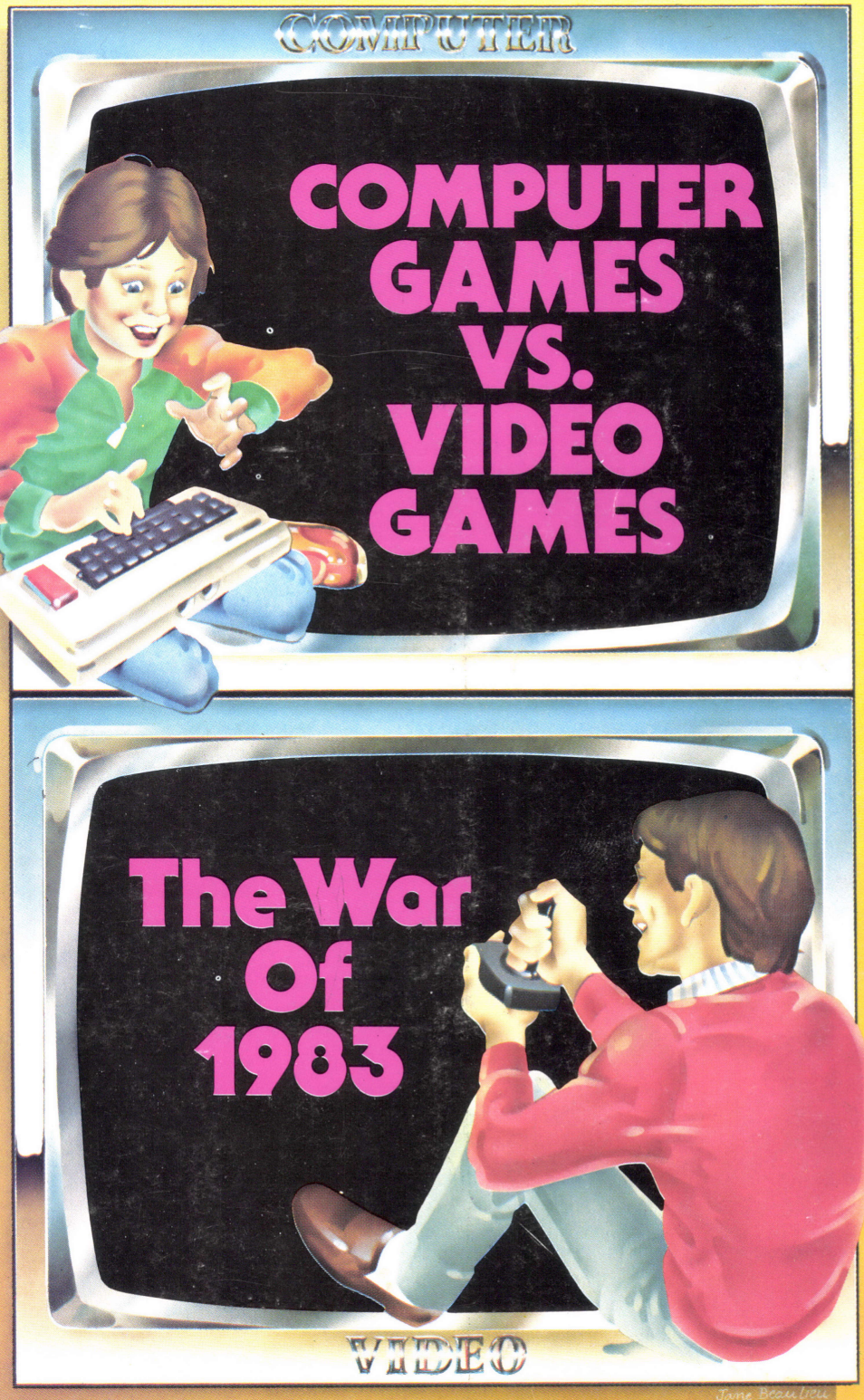
ELECTRONIC FUN with COMPUTERS & GAMES

Secrets of the Video Game Stars

How To Make A Million In Computer Games

Arcade Games For $300

Games You'll Never See



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The Arcade Quality Video Game System

The Most Advanced Video Game System You Can Buy

ColecoVision was designed for what you had in mind–a great game system that's expandable into a great computer system.

Arcade Quality Graphics

ColecoVision graphics have the superior resolution and brilliant color of real arcade games. And this new advanced level of quality holds true for every part of the system.

Plays The Best

ColecoVision has arcade quality controls–joystick, fire and jump buttons that make it easy to play. And ColecoVision offers a library of your favorite arcade games like Donkey Kong™ (which comes as a bonus with ColecoVision), Turbo™, Zaxxon™ and Cosmic Avenger™. Sports and educational games, too. Even ColecoVision's exclusive new Smurf™ game based on the #1 TV cartoon series.

Plays The Most

ColecoVision plays more games than any other system, because ColecoVision is an *expandable* system. By using ColecoVision's first expansion module you'll be able to play all of the Atari® VCS™ compatible cartridges.

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When you buy ColecoVision, you've already bought a sophisticated *computer* ready to accept expansion modules of all kinds. And in 1983, you'll be able to "activate" ColecoVision's amazing memory by simply plugging in a keyboard, a printer and other computer accessories. This expansion feature is your assurance that your ColecoVision will always keep pace with "state of the art" developments in electronics.

ColecoVision–a great game system that's expandable into a great computer system. The most advanced video game system you can buy.

YOUR VISION IS OUR VISION COLECOVISION™

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Dad,

This is the system we've both been waiting for. ColecoVision has everything! It plays the best arcade games – It looks and plays just like the real arcade. And it plays the most arcade games. It's got a plug-in attachment that will allow us to play all of Atari's VCS games!

Bill

P.S. And look at this, Dad. ColecoVision is also a computer! And that's important – because, you know, I don't want to just play games. Could we go to the store and take a look?

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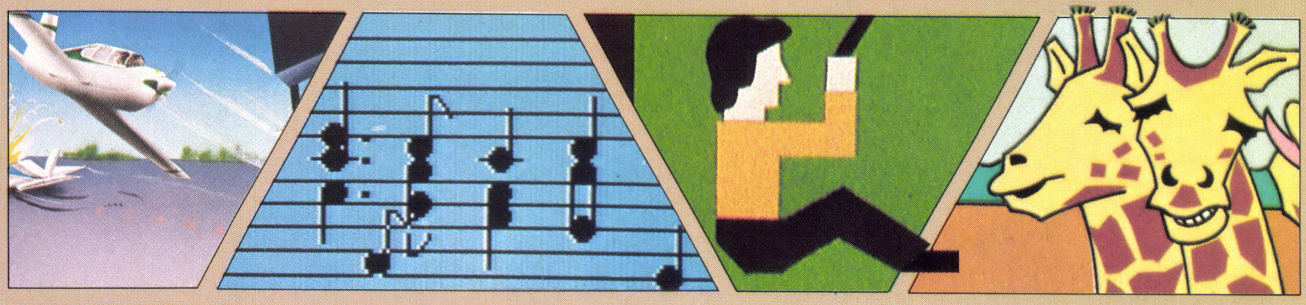

ELECTRONIC FUN with COMPUTERS & GAMES

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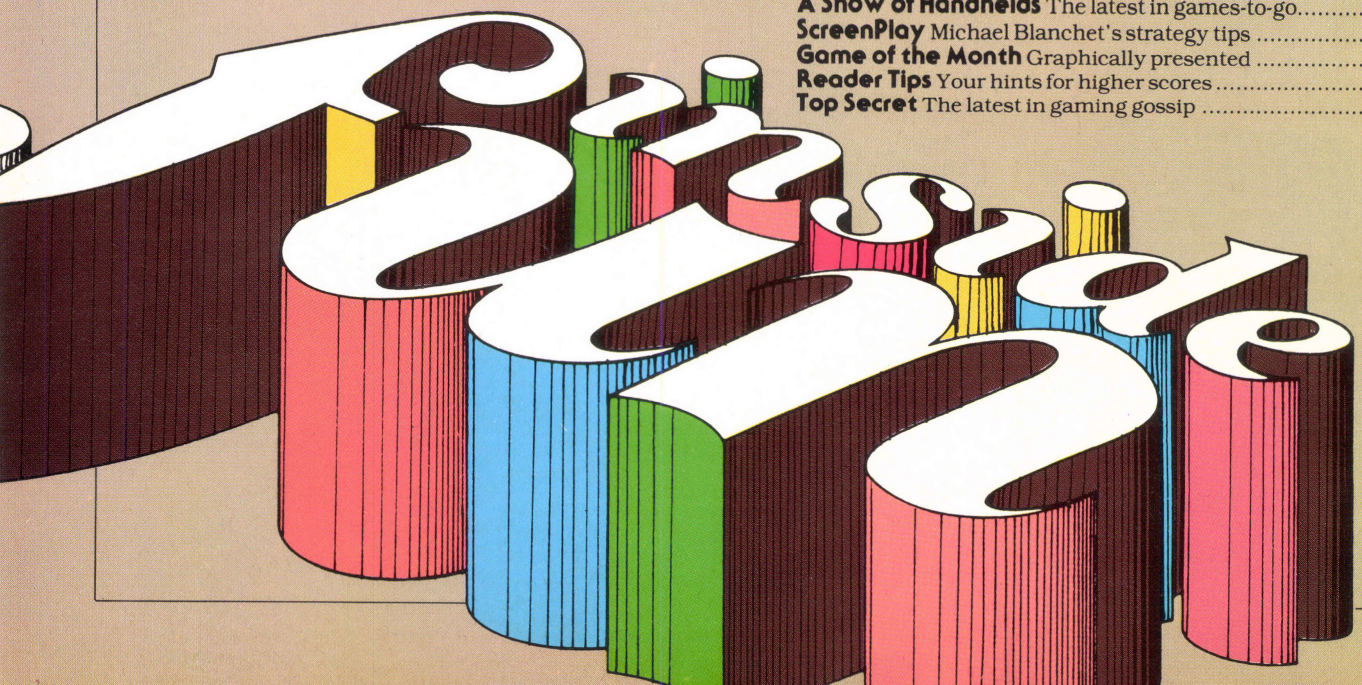

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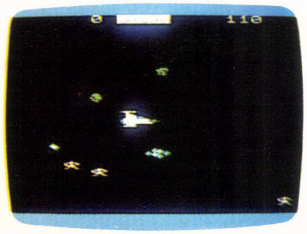
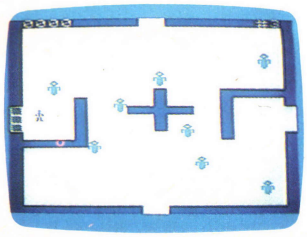


Meteor Run — 1613



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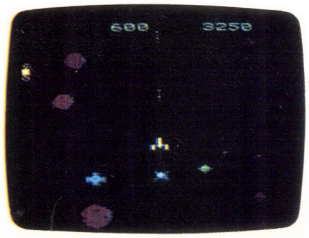

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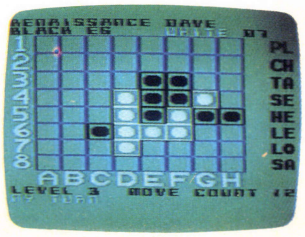

Renaissance — 1600

Editorial

Eye of the tiger

There is trouble brewing in the video game world. Even as the millions of quarters are dropping into the slots, even as the cartridges and game systems are disappearing from store shelves faster than they can be made, even as the press hails video games as the New National Pastime—there is a problem that hard-core fans are becoming aware of.

If you saw Rocky III, *you saw Rocky Balboa as the world champion. He had grown fat and slow and had stopped trying. He lost that "eye of the tiger" because he didn't need it anymore. Right now video games are in the same position. They have the whole world in their hands, so innovation and creativity—the two elements that made video gaming so popular in the first place—are being held back.*

It seems like over half the games that came out last year were knockoffs, copies, ripoffs, imitations or heavily *influenced by other games. You can change the name and characters of a game, but even after you take away the ghosts and power pills, it's still* Pac-Man. *And every ladder game of last year is just another* Donkey Kong. *Everyone is trying to clone last year's hit game instead of developing next year's. Then there is the question of licensing. While it's fun to turn every movie in the world into a video game, we sense that it is easier to use a hit title that already exists than it is to conceive an original, spectacular game. While the Japanese seem to be doing all the innovation in video gaming (*Space Invaders, Pac-Man, Donkey Kong*) American companies are lackadaisical—grinding out more of the same tired, unoriginal but profitable games.*

If this play-it-safe attitude continues, the American public will lose its present fascination with video games and the critics will think they've proven what they have been saying all along—that video games are just a fad. We know otherwise.

Video game makers—get back the eye of the tiger.

Readers—Watch out next month for the results to November's Name That Game contest. The response was so overwhelming, we couldn't tabulate them in time for January.

The Editors

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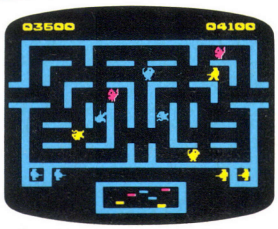
Are you up to the challenge of Wizard of Wor™ and Gorf™?

So you're hot stuff at video games? Joysticks melt in your hand? Don't let it go to your head. Try mastering Wizard of Wor and Gorf, the two Bally/Midway arcade hits you can now play at home. They're new from CBS Video Games.

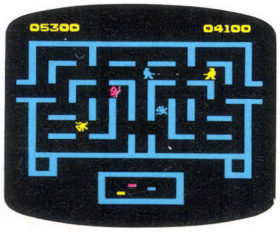
Both are made for the Atari® Video Computer System™ and Sears® Video Arcade.™

WIZARD OF WOR

Dare you enter the Wizard's diabolic dungeon where doom lurks at every turn? Can you keep your composure as the Wizard's henchmen try eating you... ALIVE? Fight back. Use your radar screen.



Vaporize the Burwors. Chase the Worluk.



Until the Ultimate: The sometime-visible/sometime-invisible Wizard. Trust no one.

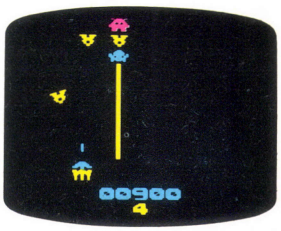
Wizard is designed so two may play at the same time. And since all's fair in Wor, even your best friend can zap you.

Now we don't want you to freak out totally, but if you're still up to the challenge, top the all-time, high score: 99,500 by Frank Merollo (10/82) and Buz Pryzby (8/82).

GORF

Can you hold up under the challenge of four different boards in one game? At nine different levels? Try and beat the high score of 32,700 by Horace Eckerstrom (9/82). No sweat? Well, what if we told you each level was faster than the last? Next time you'll think before you speak. But now you must face:

Gorfian bombs.

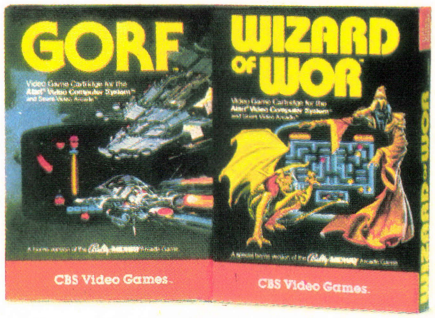


Kamikaze crazies & Laser Ships.

Deadly Subquark Torpedoes.

And finally: The dreaded Neutron Flagship.

Gorf's not easy. There's only ONE vulnerable spot on the Flagship. But don't let a little neutronium bomb stop you from hitting it.



Now that you know what to expect, are you still up to the challenge of Wizard and Gorf?

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CBS Video Games

Are you up to the challenge?

ARE YOU HOT ENOUGH T

Introducing "JOURNEY ESCAPE," the challenging new DATA AGE™ Video Game.

You're on the road with America's hottest rock group, Journey. And they're counting on you. You're the only player who can help Journey make it to their scarab escape vehicle. Only you can outsmart the promoters, avoid the photographers and fight off the love-crazed groupies. If you can handle it!

It's a tough game. As Journey says, "Some will win, some will lose . . ."

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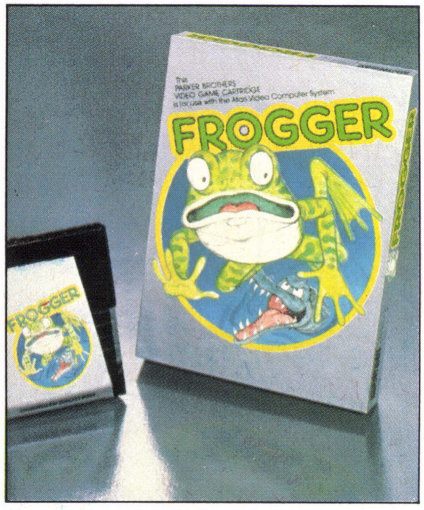
TO PLAY WITH JOURNEY?

UP TO NOW, YOU'VE HAD IT EASY.

letters to the editors

FROG FAN

To tell you the truth, I liked your article "Why Frogs?" better than any of those silly frog games they're coming out with. Next, I think you



should tackle all those ridiculous ladder games that came out after *Donkey Kong*.

Robert Mogarten
Maine

We'll think about it. If you spot any other groups of games that seem very similar, let us know.

COLECO OR ATARI?

Your review of the ColecoVision system was very good. It told me a lot about the system and the games that go with it. But you didn't answer the one question I wanted answered—which is better, ColecoVision or the Atari 5200? Why the cop-out?

Nina Wallace
Wisconsin

No cop-out, Nina. When we do a test report of a game system, our aim is to tell you the good and bad points of that system. In November we tested the Atari 5200 and in December we tested ColecoVision. We pointed out a lot of good and bad points of both systems and it's up to you to decide which one offers what you need in a product.

SAVE THE WORLD

Thanks so much for the article "Save The World" in which we had to fight our way out of crisis situations. One thing though—you shouldn't put the solution right next to the trap. It's too tempting to read the solution right away without trying to figure it out yourself.

Ron Santangelo
New Jersey

You know . . . you're right. We should have put the solutions in the back of the magazine somewhere. When we do another "Save The World" in a few months, we'll fix that up.

OH BROTHER

I was amazed at how many companies there are out there making video game software. Your list was very helpful. But are you aware that you left one of them out? Parker Brothers was not included.

Herb Dunn
New York

Oops, and do we feel guilty. Please forgive us for that oversight. If it will make things better, check out this month's interview with Parker's Rex Bradford and Sam Kjellman, designers of The Empire Strikes Back.

NO MISTAKES HERE

I just thought I'd let you folks know that in your premiere issue, all the page numbers in the table of contents are wrong.

Andy Foote
California

We did that on purpose, Andy. You see, we feel that video games should be challenging and so should the magazine. Next month we're printing half the pages upside-down.

ARE YOU BLIND?

I can't believe how you rated those games in last month's issue. You gave rotten marks to some of my favorite games, like *Encounter at L-5* (Data Age), *Room of Doom* (CommaVid), *Alien Invasion* (Zircon) and *Raiders of the Lost Ark* (Atari). Are you blind, or what?

Name Withheld
Utah

Dear Mr. or Ms. Withheld: May we call you "Name"? No, we're not blind. We called 'em like we seen 'em. Certainly a lot of people are going to disagree with our opinion, but that's what an opinion is for. Hopefully, a lot of people will also agree with our ratings.

SUGGESTION BOX

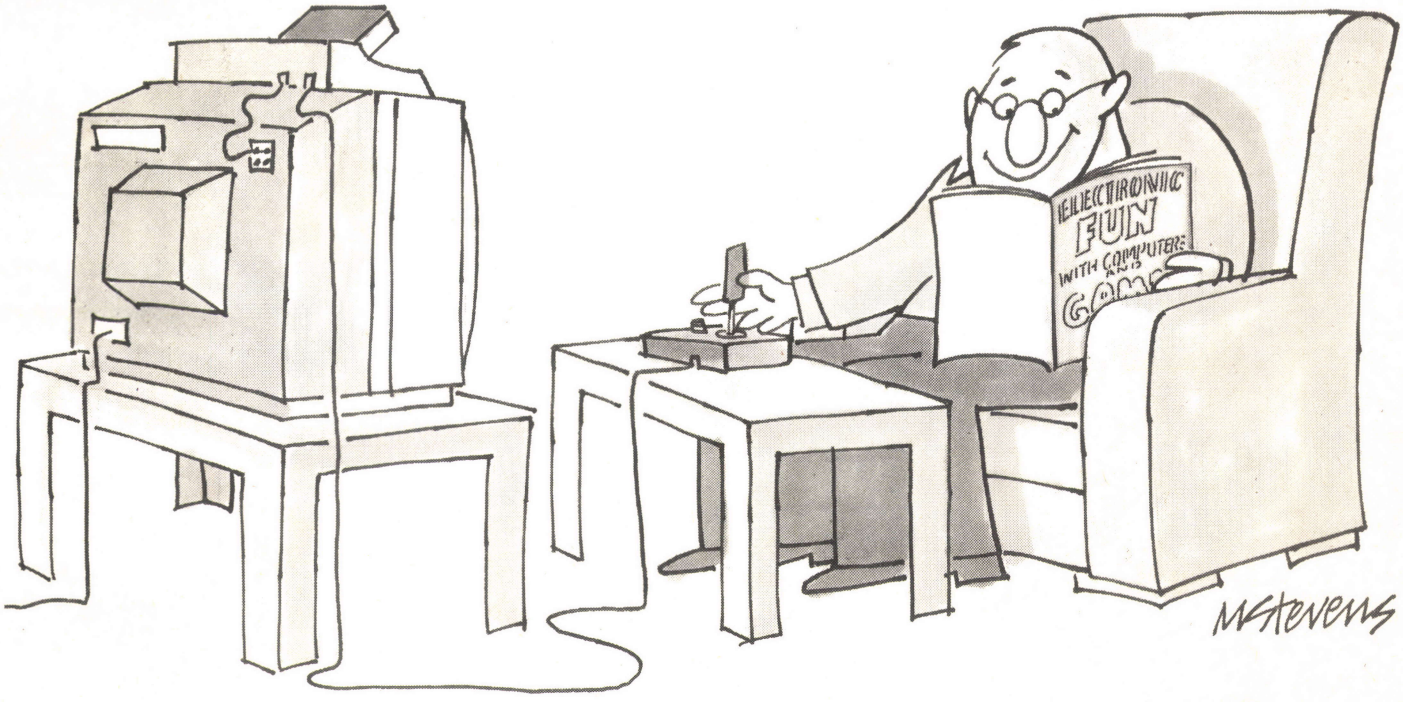
Why don't you do an article on all those clubs that are popping up for video gamers? Some of them are selling used cartridges, some of them have exchange programs, and some of them just send you junk and rip you off. You should do an investigative report on these operations.

Richard Goodman
Georgia

You must be reading our mind. Watch out—next month we go undercover and check out these video game clubs.

Write to us! We can't promise that we'll answer every letter, but we will read them all. We welcome your comments, advice and questions. Send your letters to: Electronic Fun, *350 E. 81st St., New York, NY 10028.*

Now...a magazine about video and computer games that's as much fun to read as the games are to play!



New from *Video Review*, the world authority on consumer video, the definitive new magazine for high-tech gamers: **ELECTRONIC FUN WITH COMPUTERS & GAMES.** Electronic Fun will offer readers the best coverage of the market, the best graphics and best writing in an irresistable format that is new, different and better than anything else available today.

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Remote control joysticks and whirly buckets

NEW VIDEO ENGINEERING

Beamscope $79

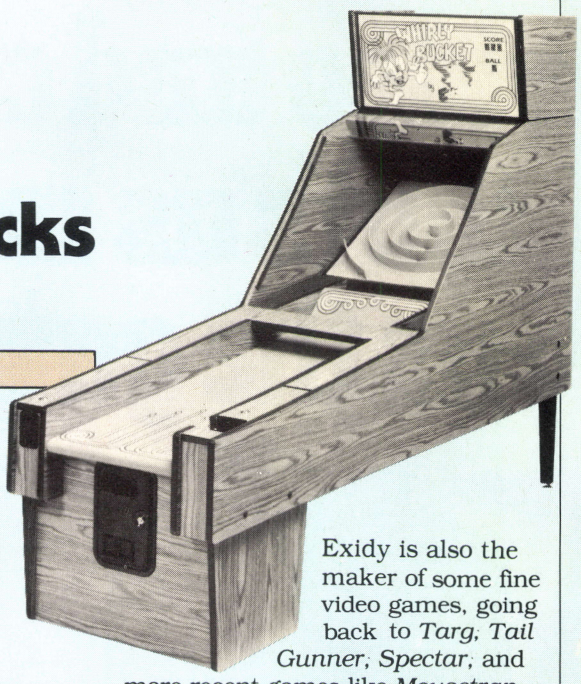
Projection TVs cost a bundle, but there's a way to increase the size of your screen and enhance game play without giving up your life savings. BeamScope is a giant magnifying

glass you attach to your TV screen to blow up *Space Invaders*, *Commie Mutants* and Mary Tyler Moore to twice their normal size. No tools are necessary for the hook-up, and although there is a minimal loss of clarity, you can watch your TV under normal lighting conditions. There are three different models to choose from and BeamScope is made for 19 and 25 inch screens. New Video Engineering, 127 Old Short Hills Rd., West Orange, NJ 07052

EXIDY

Whirly Bucket

Remember *Skee-Ball*? *Whirly Bucket* is the 1980s version, complete with an audio system that beckons you with electronic coos, purrs and giggles. Another innovation is the moving target, which spins around and awards double the point value when hit. *Whirly Bucket* is not much larger than the average pinball game.

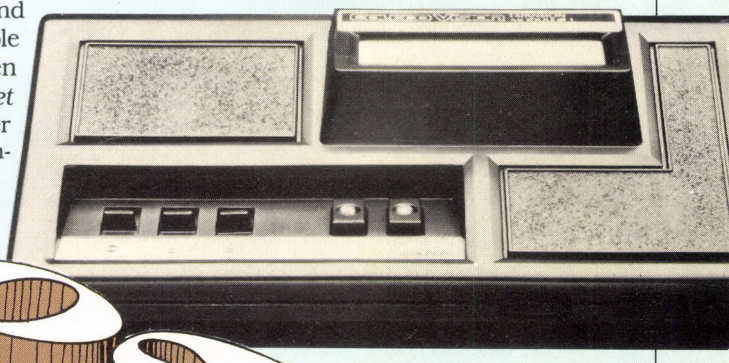


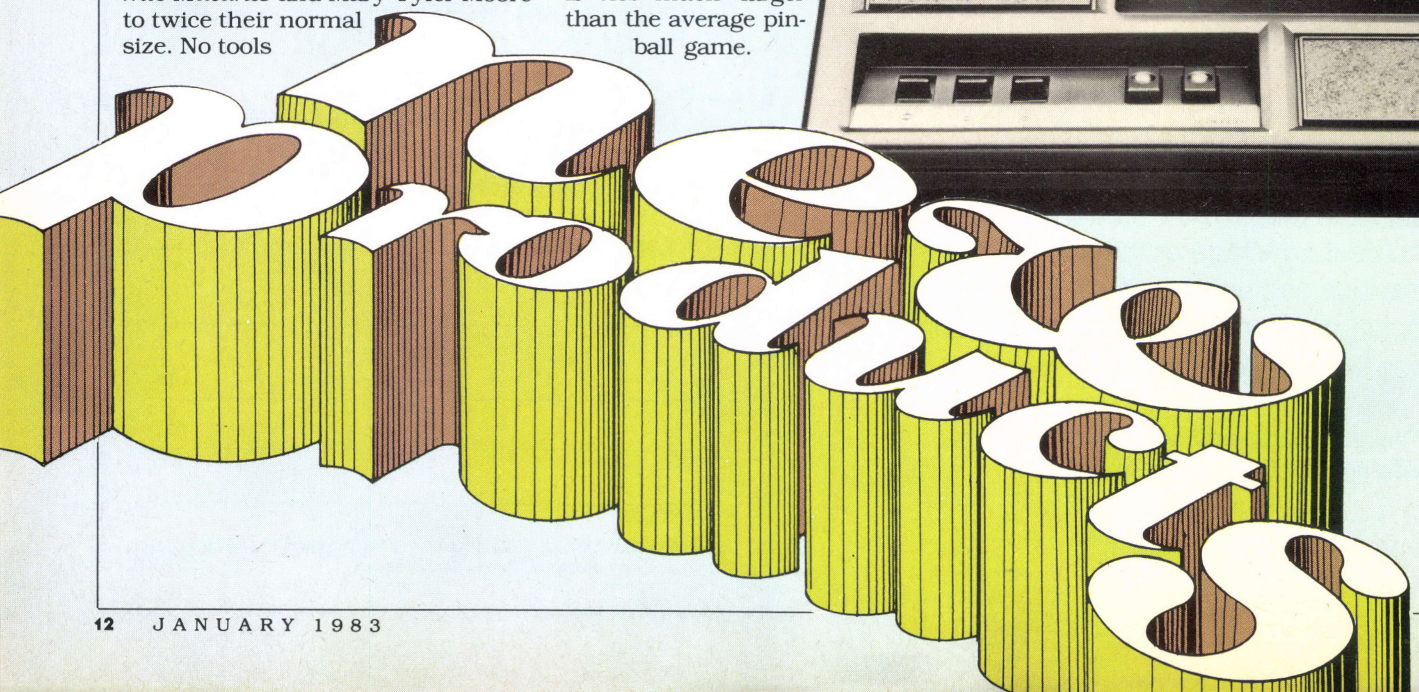
Exidy is also the maker of some fine video games, going back to *Targ*, *Tail Gunner*, *Spectar*, and more recent games like *Mousetrap*, *Venture*, *Victory* and *Pepper II*. Exidy: 390 Java Dr.; Sunnyvale, CA 94086.

COLECO

Expansion Module $60

As promised, Coleco delivers this adapter that you attach to your ColecoVision, allowing you to play any cartridge that fits into the Atari





VCS. This Atari adapter plugs into the Expansion Module Interface at the front of the ColecoVision and will accept either your Atari joysticks or Coleco "roller controller." Other expansion modules will follow, the first being a steering wheel and accelerator pedal to be used for *Turbo* and other driving games.
Coleco Industries, Inc. 945 Asylum Ave., Hartford, CT 06105.

GAME MATE

Remote Control Joysticks $75

It's one of those "Why doesn't somebody invent . . . " ideas. Well, somebody *has*. These new wireless joysticks let you sit back—as far as 20 feet back—and enjoy your video

games without getting tangled in annoying wires. You just plug the power and joystick cables into the Game Mate receiver (included) and insert the joysticks into the remote base units. The Game Mate works with the Atari VCS. Batteries are not included.
Game Mate, Cynex Manufacturing Corp., 28 Sager Pl., Hillside, N.J. 07025.

IMAGIC

Storage Center $29.95

Sometimes a *Demon Attack* seems tame compared with a Parent Attack—when your folks see your video game equipment strewn

all over the house. That's why Imagic developed this storage center that holds and organizes Atari or Intellivision game consoles, paddles, joysticks and up to 18 cartridges. Designed with a sturdy simulated wood grain base and tinted dust cover, it provides a way to stash and display your video game paraphernalia. Kill all the aliens you want and defend civilization against evil forces . . . but you don't have to make a mess of it.
Imagic Corporation, 981 University Ave., Los Gatos, CA 95030.

ODYSSEY

Talking Video Games $34.95

Video games have grown up—now they're talking. You'll need three things to have talking video games—your Odyssey system, The Voice sound module and either of these two new games—*Nimble Numbers Ned* or *Type & Tell*. In *Ned*, you have to solve math equations and leap over barrels. The Voice gives you instructions and offers congratulations for correct answers. In *Type & Tell*, you can type any words you want (even ones that aren't in the dictionary) into the keyboard, and listen to the game say them to you. This is great if you have a toothache or you're not feeling sociable—let your fingers do the talking.
Odyssey, Interstate 40 and Straw Plains Pike, P.O. Box 6950, Knoxville, TN 37914.

Secrets of video game superstars

By Len Albin

Here and there, in small towns and large cities, there are players who refuse to be beaten by video games. At first the games gobble large quantities of quarters. But after a while the balance of power changes and the serious player develops a more meaningful relationship with the machine.

These are the video game superstars, and they know the pleasure of toying with a game—sometimes for hours. Yet their ability isn't anything magical; the "Force" is *not* with them. Instead, they have the Knowledge. Like the astronaut who ripped the brains out of the computer Hal in *2001: A Space Odyssey*, they have extracted everything worth knowing from a particular video game.

Here is the Knowledge as it is applied to ten well-known games in the arcades today. The following are short cuts, tricky techniques and sly strategies that will keep you from going back to the change-maker every five minutes. Here's what the really good players have discovered about their favorite video games, and why they can deliver superb performances. These are secrets that the casual player can't quite make out when he peers over the shoulder of an experienced pro. With these secrets, perhaps you will be able to post your initials with the All-Time Immortals.

Cindy Johnson is a Chicago-area student of business administration. Within two months of first playing GORF, she hit 80,000 points and has been a veteran Space Avenger for years.

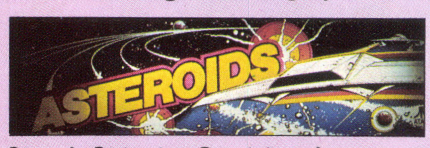
Cindy's strategic approach for the Astro Battle wave focuses on firing patterns. First, a Gorfian robot appears from the upper right and spits out 24 invaders into formation. The correct strategy is to move slightly right, blaze the Gorf, and then move slightly left and start shooting vertical columns of invaders, starting at the right side of their formation. By trimming from the edge, you won't have to move under them much—as you would if you kill them row after horizontal row. With many invaders destroyed, you can leisurely plug the flying saucers that glide horizontally across the top for extra points while keeping to one side of the phalanx.

From Secrets of The Video Game Superstars by Len Albin. © 1982 by Len Albin. Published by Avon Books

Hubert Matignon

Ben Zuhl, 31, is a "budding, yet unpublished writer" who lives in Chicago. Ben routinely scores in the vicinity of 120,000 points on DONKEY KONG.

Usually, Ben runs up the three left-hand ladders, and grabs the umbrella prize to Kong's left—just to get that prize out of the way. Then, for the flames, he knocks out a few pins to trap most of the flames on the right side of the screen. The standard procedure for knocking out pins is to make Fat Man run over one, then have him double back and leap over the gap that's created. However, if a flame is very close to the other side of a pin, it's too dangerous to run over the pin and leap back across the gap. So instead, Ben makes Fat Man *step on* the pin and reverse direction *before* crossing the gap. When this happens, Fat Man looks like he's a second baseman stepping on second before starting a double play.



Ricardo Rojas is a Dominican-born seventh grader who scores over a million points at ASTEROIDS at New York City's Broadway Arcade Amusement Center.

Ricardo figured out a fine way to nail the small saucer without getting plugged himself. With one rock left, just before the saucer emerged, Ricardo hit THRUST full and accelerated his ship into a vertical path, up off the top of the screen and up from the bottom. Since "space" was almost empty, he had plenty of flying room, and the chances of striking the last rock were very small. Meanwhile, as the ship was on this course, the small saucer emerged horizontally from the right side of the screen, firing away. When their paths were about to cross, Ricardo rotated his ship towards the saucer—still at full speed—and fired a volley of bullets at Little Man. That earned 1,000 points, and afterwards, he kept flying and waited for the next small saucer. At this great speed, Ricardo's ship could not be easily located by the small saucer.

Eric Ginner, 21, is a college student from Mountain View, California. Eric won the 1981 Atari National Centipede Championship and boasts a personal high score of 824,000.

Starting from a little less than halfway down the screen," Eric says, "you want mushrooms from there, going down about seven rows—just a big block of mushrooms. And you keep five or six rows right above the bottom of the screen clear, so you can have room to move around. You also leave a hole on the side of the screen, a few columns wide, and shoot through that. The centipede comes down nice and slow.

Frank Lavine is a night clerk in a Chicago grocery who likes QIX because it's one of the few nonviolent games. His high score is 91,462 points.

Frank begins by fast-drawing a bunch of tall, skinny rectangles right up the center of the big rectangle so he gets a "tree-trunk" pattern. The rectangle at the top of the trunk is so close to the edge of the big rectangle that the Qix can't wiggle through the gap. Now it's got only half the map to bounce around in. Frank has gotten his Qix trapped on one side.

Matthew Laborteaux is one of the stars of LITTLE HOUSE ON THE PRAIRIE and expert at BERZERK.

In *horrible* emergencies—where your path to an exit is completely blocked—you can attempt to defy the laws of physics and of *Berzerk*. If an entrance barrier is the same color as your humanoid, you might attempt to walk into it—occasionally you'll pass through. Another possible way out is through the thick *outer* wall of the maze near an exit. Matthew has seen it done halfway between the bottom exit and the right corner of the screen.

George Mesi plays STARGATE over at Mother's Arcade in Mt. Prospect, Illinois. In his first attempt, he scored 60,000 and his recent high score is 1,315,000.

If you enter the Stargate with four or more humanoids riding your ship, you'll "warp" ahead four attack waves. So, for example, a warping in wave six will bring you to wave 10, a firebomber showdown. Warping in wave nine will get you to wave 13. However, warping is not allowed after wave nine.

That's unfortunate, because a warp *also* gives you credit for all the points you could have gotten in all the waves you jumped over. "It's the best strategy you can use," says George. "You get all those free points!" You don't even have to put down your men when you pop out of the warp—it's done for you.

Dave Shimko, 22, hails from Chesterland, Ohio. He's studying to become an actuary for an insurance company.

Be greedy early. In the first wave, it pays to engage the enemy at the front of the pack, where the Command Ship lurks. When this ship is blazed, a Droid will turn into a Command Ship to take its place. Then you kill the second Command Ship and wait for another Droid to transform. The main point of this strategy is that you make a profit of 500 points on every Droid. Rather than killing 1,000-point Droids, merely wait until they become 1,500-point Command Ships and *then* do them in. Although Command Ships can shoot and creep along through space faster than Droids, it's worth the extra trouble for the sake of the points.

Eric Ginner (see CENTIPEDE) has hit 832,000 on TEMPEST.

Some players like to pick relatively safe stops on some of the webs—where they can try to stay put and shoot, and not have to worry about exactly where the flippers are. In the "figure-eight" web (16), the best place to stay is on the left half of the figure-eight. On the "stairsteps" (9), the first horizontal surface at either end of the steps is very nice. In level 14 (the "W"), the optimum spot is on the flat horizontal line between the two halves of the W. The sweet spot in the "four-leaf clover" (7), amazingly, is right down in any of the four cracks between the leaves. In the "square" (2) and the "triangle" (6), anywhere except directly on a corner is good, and in the "circle" (1) and the "straight line" (11), any place is fine.

Mike Murphy is an 18-year-old accounting student at the University of Illinois who excels at SCRAMBLE. "It's challenging to get through the terrains—they're like mazes," he says.

"If you just barely touch ground objects at the top with your ship," says Mike, "they'll blow up." The trick is not to go *too* far down into a herd of objects or you'll blow up along with them.

It's not clear why this "grazing" strategy works, but some of the blame should be put on *Scramble*'s generally fuzzy graphics. Objects may appear to the human eye to be in one place, but the computer understands them to be in a slightly *different* location. Often, a player's ship will graze a mountain or wall and not get blown up.

Got it? Will you see your *initials on the screen?* □

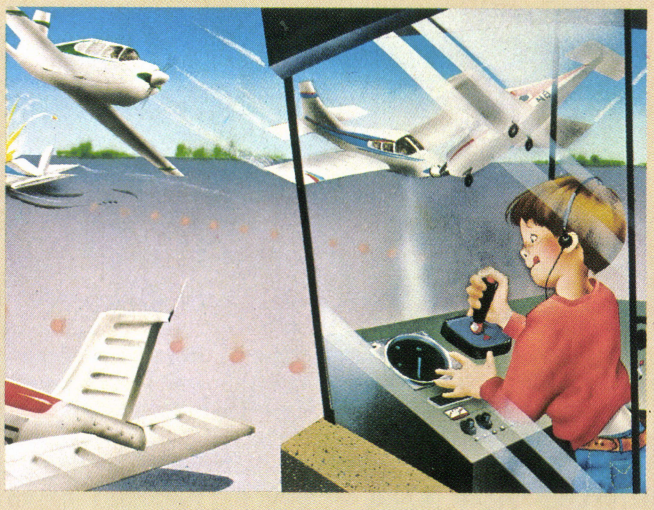
A comical catch-all of odds and ends

Dumb Bombs

Should *Pac-Man* register for the draft? According to the *San Jose Mercury*, he should. Why? Because, says John Shea, president of Technology Analysis Group, a military consulting firm, the microprocessor that makes *Pac-Man* run is more sophisticated than those found in any American ICBM or fighter plane. Shea also believes that the military could be as far as eight years behind the consumer electronics industry when it comes to using computer products. Why again? Because defense manufacturers often have to wait for their components until after the game companies get theirs. This means that arcade games are smarter than the military. Of course they are. You don't see them running around in crew cuts or doing pushups, do you?□

Terminal Terminals

A long time ago the only thing to play with at the airport was the insurance machine. This was fun until you ran out of

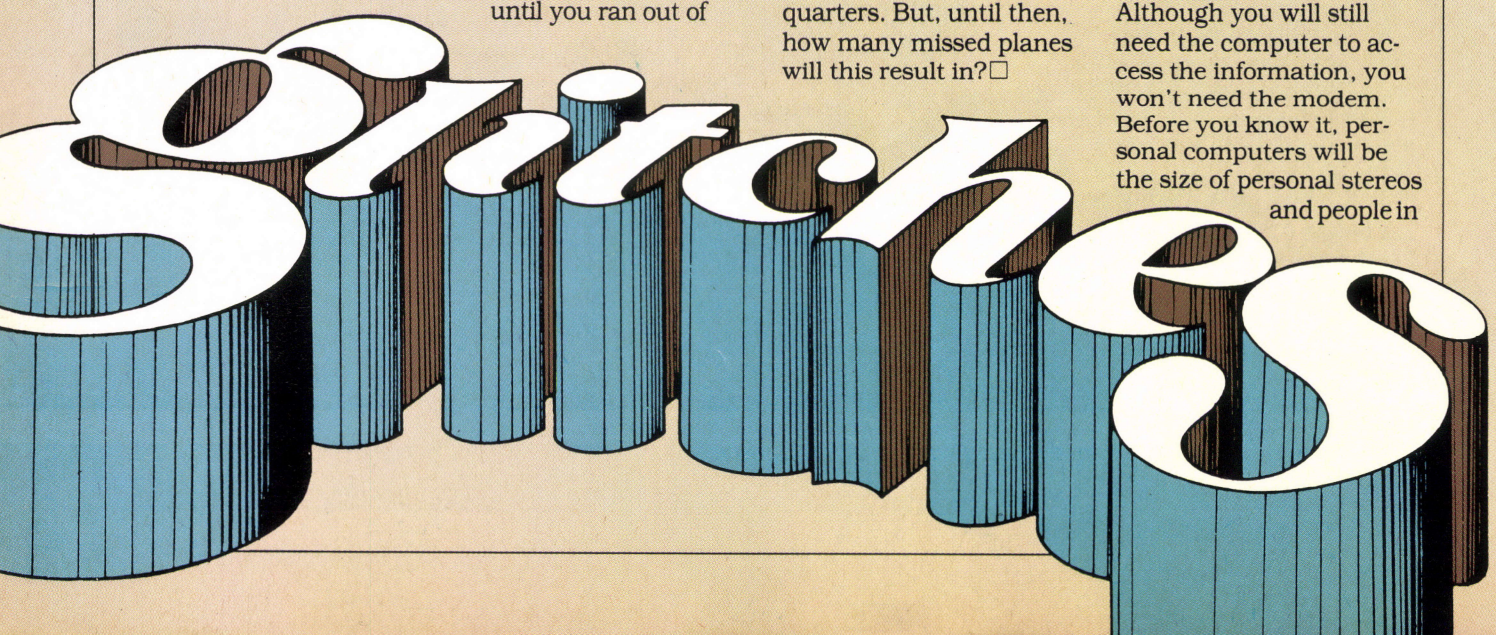


forms. Then they put little TV sets on the arms of those really uncomfortable plastic seats in the waiting areas, so for 25 cents you got to watch three and a half minutes of local talk shows. This was fun until you ran out of patience.

Now airports are beginning to catch up with the times. Kansas City International Airport is, anyway. The KCIA is planning to install arcade games in the terminals. These will be fun until everyone runs out of quarters. But, until then, how many missed planes will this result in?□

64K On Your FM Dial

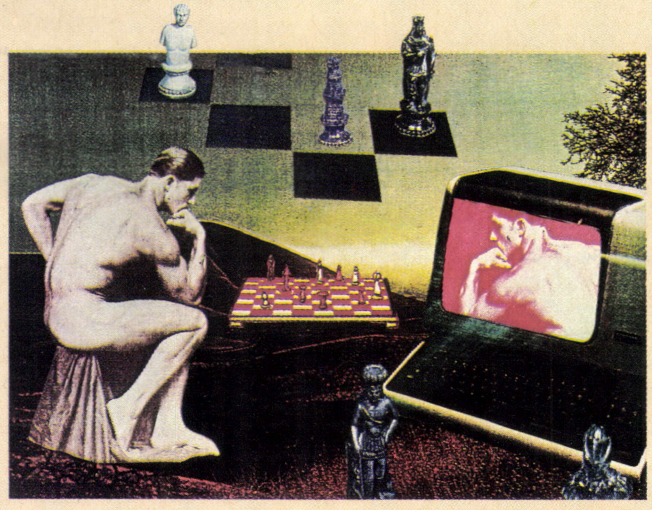
The radio disc jockey may well be on his way to becoming the floppy disk jockey. It seems that the FCC is considering allowing an FM subcarrier frequency (that is, the part of a radio signal that is not used for ordinary broadcasting) to be used as a transmission medium for computer data bases. This would be an alternative to the high cost of sending data over cable or telephone lines. Although you will still need the computer to access the information, you won't need the modem. Before you know it, personal computers will be the size of personal stereos and people in



three-piece suits will be walking down the street rocking out to the latest Dow Jones averages. □

Your Move

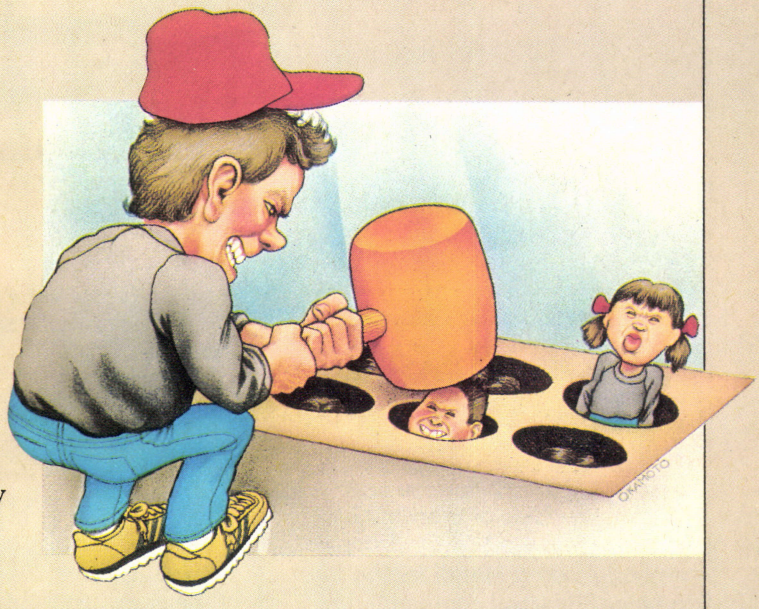
There are chess pros and then there are chess programs. And Edward Fredkin offered $100,000 to the first chess program that could beat a chess pro. So four chess pros and three chess programs competed to see if the prize would, in fact, be awarded. The players represented the top 10 per cent in chess and played one game with each computer. How did the humans fare, playing against a computer which



can evaluate about 20 million moves in three minutes? Well, you'll be happy to know that Mr. Fredkin can hold on to his 100 grand for a while. Tom Martinak defeated the computers handily. Which just proves that a computer may have a great memory, but it takes a man to know how to make moves. □

Mole In One

We don't know about you, but when we're feeling down, nothing cheers us up faster than going out and beating up a few moles. In the old days, it was tough finding them, but now moles are readily available for beating up. They're located in *Whac-A-Mole*, a hot new arcade game. During a game of *Whac-A-Mole*, each player is confronted with a board containing five mole holes. Then the moles start popping out of these holes at random (you never know which hole one will pop out of next) and you have to hit the moles on the head with a padded sledge hammer before they disappear back into their mole holes. Get it? Wait until the people at Greenpeace hear about *this* game! *Whac-A-Mole* can be custom-made to fit the theme of any operation, and special character heads can be made, such as sharks, monsters, bats, snakes, jokers . . . or little sisters and brothers.



Whac-A-Sibling; it could become the hottest new thing in entertainment since wocka-wocka. □

Fish & Chips

Aliens, it seems, are old hat when it comes to computers and video games. People find extraterrestrials ho-hum these days, so software designers have turned to the soft and furry and sometimes see-through to find the common enemy. Take, for example, *Wabbit*, the new game from Apollo. In this game, little wabbits try to steal carrots from your garden and you've got to stop them by throwing wotten eggs at them. (Weally!)

Then there's *Lemmings* from Sirius Software. In this one, your job is to stop the lemmings from drowning themselves in the ocean (whether this is done by talking them out of it or putting them in tiny bathing suits and teaching them to tread water is unclear). Then there's *Jellyfish*, also from Sirius, in which a huge jellyfish attacks a nuclear submarine (no doubt this jellyfish is a pacifist or is in favor of solar power).

If this trend continues, here are some of the games we can expect to see in the future: *Parakeets*—Giant parakeets come to live at your house and *you've* got to clean their cages; *Goldfish*—Huge goldfish take over a nuclear power plant in Pennsylvania and demand that the country return to coal power. Your job: Can you make them see reason before a meltdown occurs? And finally, *Puppies*—Enormous puppies take your parents hostage and demand Liv-a-Bites. You've got two choices: You can throw an all-night party while your parents are gone. Or not. □

reader's tips

MAJOR LEAGUE BASEBALL

"Like real baseball, practice is the key. I play a 100 game season within my circle of friends. *(Such practice has paid off for Tom. He recently won a Mattel Intellivision regional* Baseball *competition.)* I have found that at least once during a game, a home run pitch is thrown. You can take best advantage of it by swinging early and to the left. As far as pitching is concerned, always use the fast speed and go right down the middle."

Tom Crane
Chicago, IL

DEMON ATTACK

"As the designer of the cartridge, I really don't want to divulge any secrets, except that it will take any player a good month to get through all 84 waves and become familiar with all the different ships. Only then can you hope to beat the game."

Rob Fulop
Saratoga, CA

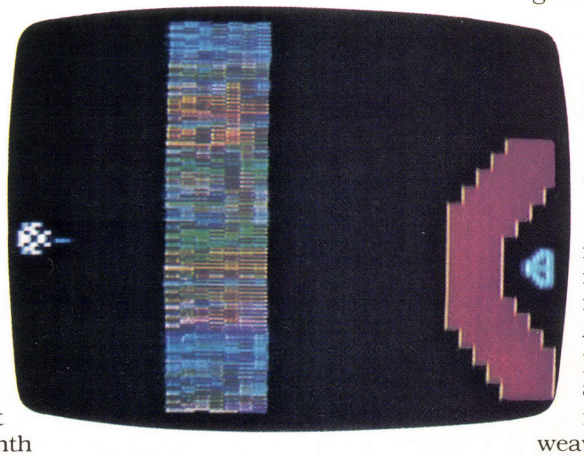
TRON

"In *TRON* there are four challenges: tanks, light cycles, grid bugs and cones. I find that grid bugs and cones can be mastered fairly quickly with just some routine practice. However, tanks and light cycles are strictly patterned games. I suggest players study the moves of the vehicles and come up with a pattern to match. Once you've developed the pattern, stick with it. It worked for me." *(Richard recently took top prize in the nationwide* TRON *tournament sponsored by Aladdin's Castle.)*

Richard Ross
Jacksonville, FL

YARS' REVENGE

"Be aggressive. At the very start of the game, go right after the Qotile's barrier, bite off a block, race back, set up the Zorlon Cannon and



get ready to fire. This is a great strategy because at the beginning of every game the Qotile launches its missiles within 10 to 15 seconds. It's one of the few times that you can actually anticipate a launch."

William Witney
Kansas City, KS

K.C. MUNCHKIN

"I've played this game thousands of times and the most effective strategy is still the simplest. I always head for the upper left-hand corner and wait there for the munchers to assemble before gobbling up the colored dot. This seems to be the best way to thwart the enemy."

Garland Newport
Knoxville, TN

LOST LUGGAGE

"To accumulate a really high score, use the two-catcher mode and remain in the middle. Always keep your eyes one or two bags ahead of your catcher. This enables you to anticipate where the bags will fall. Practice a bit without the terrorist suitcase or you'll spend most of your time resetting the game and watching underwear fall."

Sandy Lawson
Long Beach, NY

ALIEN

"As I designed it, *Alien* is really two games. There's the regular maze game and a bonus round that's much like *Frogger*. In the bonus round, players should look at the aliens as pairs instead of individuals. The key here is to weave between the pairs rather than move around them."

Dallas North
Los Angeles, CA

ASTROSMASH

"The secret to *Astrosmash* is leaving the shooter in the 'Autofire' position and steering with the directional wheel. Another hint is to shoot the fastest falling Spinner first, since an intact Spinner will destroy one of your blasters."

Troy Harwood
Brompton, Canada

Do you have a tip for your favorite game? If it's good, we'll print it in Reader Tips. *Send tips to:* Electronic Fun, *350 E. 81st St., New York, NY 10028.*

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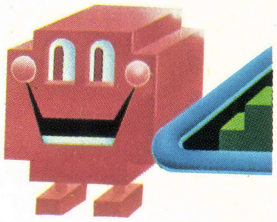
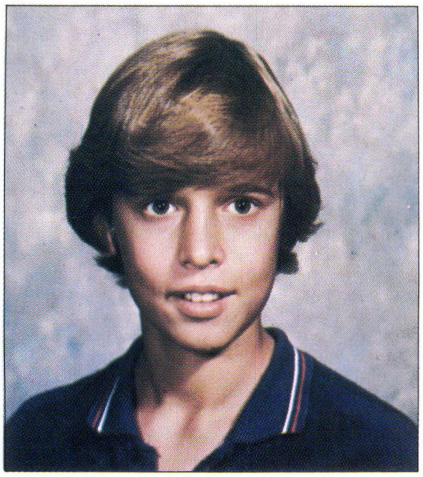
the LAN report

Collectible cartridge$





By Jens von der Heide

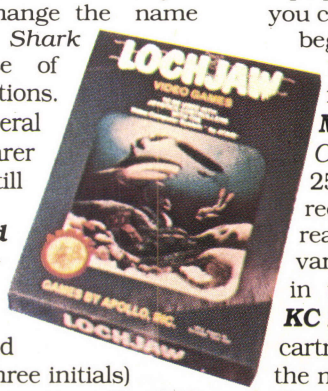
If I told you that I'd trade an original Atari *Basic Math* for a CommaVid *Magic Card*, would you know what I was talking about? You would if you were a game cartridge collector. Unlike most people, cartridge collectors buy cartridges that will be worth more in the future, regardless of playability or graphics.

Unlike computer disks, cartridges can't be copied easily. This means that they have the potential to become rare and sought after by collectors. To become a collector's item two things must happen, says one local video store employee: "One, they have to be rare. And two, someone has to be willing to pay for them."

There are several other criteria that must be met before a cartridge can be considered a true collector's item. For instance, even though a cartridge may be hard to come by, it still must be in good shape. That means the instructions and the original box should still be in good—if not mint—condition. The outside of the actual cartridge shouldn't be cracked and its label shouldn't be peeling off (which may indicate tampering). And, of course, the game should still work.

Now, before you go out and make your own decision as to which cartridges will be rare, here are some games that stand a good chance of being worth a lot of money in the near future:

Original Lochjaw—Games by Apollo had to change the name *Lochjaw* to *Shark Attack* because of legal considerations. However, several copies of the rarer *Lochjaw* may still be available.



Monogrammed Space Chase—Last year, Apollo offered a monogrammed version (up to three initials) of its *Space Chase* game. For $99, you could send your initials to Apollo and they would be programmed into the game. The initials actually appeared right on your space ship, on TV.

Skeet Shoot—The independent designer who put *Skeet Shoot* together missed a flaw which causes the game to give a vertically rolling picture. Apollo recalled the game, but the "defective" version will probably become more valuable.

Basic Math and Hunt and Score—These Atari cartridges are no different from *Fun with Numbers* and *Concentration*, they're just the former titles and the rarer versions. *Pele's Championship Soccer* was changed simply to *Pele's Soccer*.

CommaVid's Magic Card—With only 500 copies in existence, this is one of the rarest cartridges around. The cartridge allowed anyone to program their own game idea in the same computer language that the pro designers use. The game could use up to 1 K of computer memory and could be stored on a cassette tape player via a connector that you could build yourself. To help beginners program, the cartridge came with a 136-page instruction book.

Maze Craze—The early *Maze Craze* boxes claim to contain 256 variations while the more recent boxes claim only 16 (the reason being that there are 16 variations of each of the 16 games in the cartridge).

KC Munchkin—This Odyssey cartridge was the subject of one of the many lawsuits Atari was so fond of bringing against anyone with a game that even began to approach the concept of *Pac-Man*. Because it was a maze game that involved eating dots, KC

Continued on page 94

K.C. MUNCHKIN was yanked off the shelves when judged to be similar to PAC-MAN. K.C.'s KRAZY CHASE is the sequel, but MUNCHKIN is a collectable.

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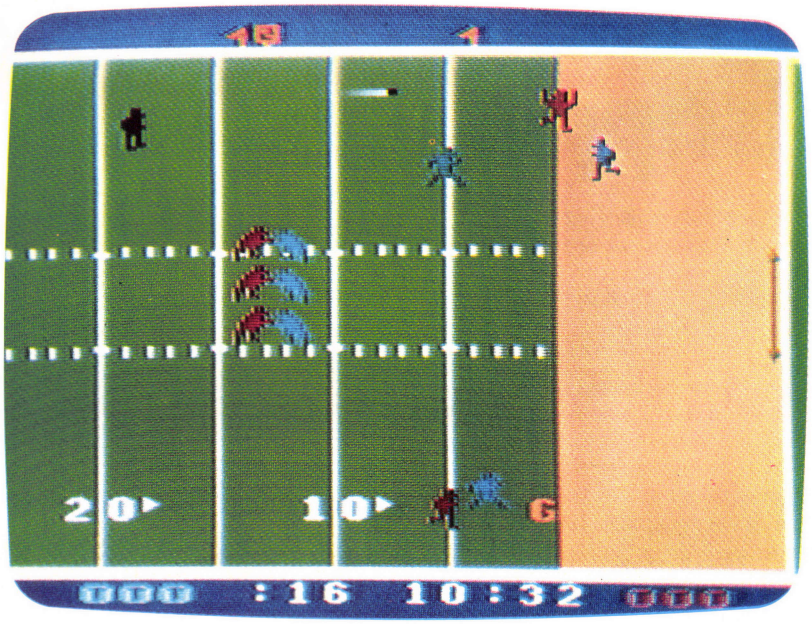

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output input

The disappearing card trick

I see a lot of computer ads which refer to CP/M. Is this a brand of computer or what? And what is DOS?

Mary Margaret Lum
Ohio

The answer is: CP/M is not a brand name. IBM is a brand name. It's similar, I know, but it's not the same. CP/M (which stands for Control Program for Microprocessors) is a type of operating system. An operating system is considered software even though it is built into the main computer hardware. In essence, the operating system acts as a liason between the software programs you use—such as games or word processing—and the computer itself. Although the program tells the computer what to do, the operating system acts as a director, keeping all the electrical signals going on the right circuit paths in an orderly fashion without bottlenecks or gridlocks. It also keeps track of the amount of memory used and the amount left and prevents the microprocessor from doing more than one thing at a time. It's a jack of all trades.

A DOS (Disk Operating System) is another type of operating system which regulates the transfer of information to and from the floppy disk. Most of the time the DOS (sometimes pronounced *doss*) is contained within the disk drive, but occasionally you have to have it installed in your computer's memory.

Most software is written to fit a specific operating system and will be labeled accordingly. If it isn't clearly labeled, check with the salesman to be sure it will run on your computer.

What does it mean when they say a computer has an eight-bit microprocessor? Is this anything like a two-bit something? I mean, is it an insult?

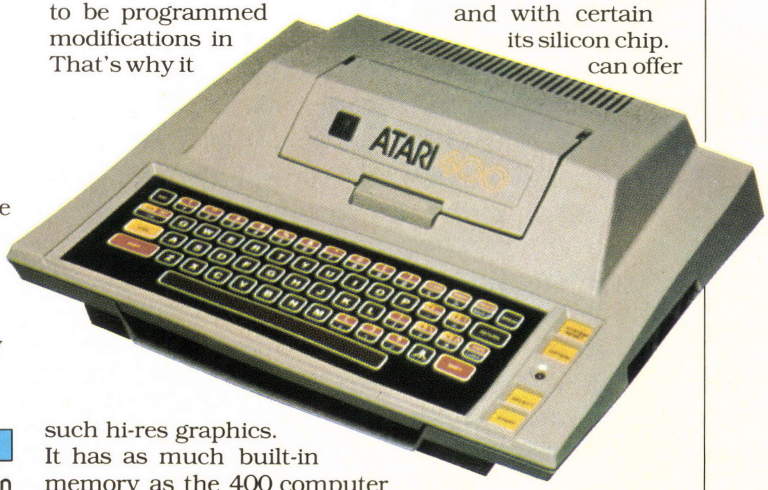
Michael McFadden
California

The answer is: No. It's not the least bit (no pun intended) derogatory. What it means in computer jargon is the number of bits a microprocessor has. This, in turn, refers to how much information—or data—a microprocessor chip can handle at one time. Each bit is either a 1 or a 0 in the binary number system. And it takes eight bits to make a byte, or one complete character. So if a microprocessor could handle only one bit at a time, you'd be collecting social security before the information you needed was processed. An eight-bit microprocessor handles eight bits at a time. Most microprocessors are eight-bit now, but in the near future, the 16-bit microprocessor might become the standard.

I saw Atari's new 5200 game and it has great graphics. Someone told me that the 5200 is really just an Atari 400 computer. Is this true?

Bill Mayer
Michigan

The answer is: Essentially, yes. The Atari 5200, so far as we know, is, in fact, an Atari 400 computer without the keyboard, without the ability to be programmed and with certain modifications in its silicon chip. That's why it can offer such hi-res graphics. It has as much built-in memory as the 400 computer and all that memory is devoted to the single purpose of playing games. This means that it has about 100 times the memory capacity. (128K) of the VCS and can provide games that are more challenging, more complex and more stunning graphically.



Because it is, in fact, a home computer, the 5200 is also more expensive than other games machines. Expect to pay between $260 and $270 for it.

In addition, the 5200 will have an expansion module which will allow you to play all the VCS games on it. However, even with all of its memory, the 5200 will not be able to improve the graphics on the standard cartridges. Sorry.

I know there's a software company called CommaVid and I know they have at least two games—ROOM OF DOOM and COSMIC SWARM—but I heard that they used to make something called MAGIC CARD. What is it? Can I get one?

Nesha Haniff
St. Kitz, Virgin Islands

The answer is: It's unlikely. The *Magic Card* has become something of a rarity these days. *Magic Card* was made by CommaVid about a year ago. Used with the Atari keyboard controls, this cartridge was the user's passport to the microprocessor deep within the VCS. Using the accompanying manual, the user was able to write machine language (that is, a series of 1's and 0's—a code which the computer understands) for the 6502 microcomputer contained within the 2600. That means, if you had a *Magic Card*, you could write your own games for the Atari VCS. The cost was $59.95, but they're very difficult to come by now and CommaVid is no longer making them.

I hear a lot of complaints about the controller that comes with the Intellivision Master Component and, in fact, I've had some trouble playing with it myself. Does Mattel have any plans to change the type of controller they have?

Ron Wilson
Texas

The answer is: No. According to Mattel, there are at this time no plans to replace the Intellivision controller with any other kind of controller. Mattel feels that the disc provides you, the user, with more precision and maneuverability than the standard joystick. In fact, the company suggests that the reason you—among others—might have trouble with the disc is that you've grown accustomed to the joystick. The joystick was out there first and people got used to it. Any transition is difficult and, says Mattel, it's just a matter of time—and practice—before you can get used to the idiosyncrasies of the disc and keypad as well. Despite what may seem to be some inconvenience and awkwardness, the keypad does, in fact, allow for more complexity in the games. You can choose between different screens, different ammunition and you are given more precise control over individual players in sports games. Any problems with plastic overlay slippage can be solved by simply memorizing the key that corresponds to a given function and disposing of the overlay altogether.

What does it mean when engineers say they worked backwards to learn how to program a machine like the Atari VCS?

Walter Middendorf
New York

The answer is: Taking it apart, basically. And it's called reverse engineering. According to some top video game technicians, it's a little like working on a car. There are two ways to learn how to fix a car. Either you can take a course, learn how it works and approach it in the forward direction, or you can simply take it apart and, by trial and error, learn how it works in the reverse direction. What video game programmers and engineers do, then, is to take the VCS apart and try one thing. If that doesn't work, they try something else. If that does something, they then try to figure out how it does that. And so on. They literally try hundreds and hundreds of different things on the VCS before they have even a working knowledge of it. And, says one engineer, they still don't know everything about it.

I read that television sets emit x-radiation when you play video games. I play video games. Do I have to worry about this?

Dorothy Varon
Illinois

The answer is: Not really. Although there was some speculation about x-radiation, it is only emitted by TV sets 12 years old or older. And, according to the Consumer Electronics Group, there is no evidence that it is very harmful. If you have a new TV set, don't worry. If you have an old TV set, this is a way to wangle a new one.

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Worm War I	23.86
Beenie Bopper	23.86
Fast Eddie	19.86
Deadly Duck	19.86
Alien	23.86
Turmoil	23.86
Megaforce	23.86

Epyx

Fits TRS-80 16K (Cassettes)

Invasion Orion	22.86
Temple of Apshai	34.86
Hellfire Warrior	34.86
Upper Reaches of Apshai	17.86
The Keys of Acheron	17.86
Curse of Ra	17.86
Danger in Drindisti	17.86
Datestones of Ryn	17.86
Morlocs Tower	17.86
Sorcerer of Siva	24.86
Rescue at Riegel	24.86
Star Warrior	34.86
Crush, Crumble & Chomp	24.86
Richochet	17.86
Monster Maze	24.86
New World	24.86

Syncro

Fits Atari 400/800 Computers

Maze of Death	t.b.a.
Mar Tesoro	t.b.a.
Drac is Back	t.b.a.
Alien Hell	t.b.a.
Wordmania	t.b.a.
Astron IV	t.b.a.
Laser Ants (Feb.)	t.b.a.
Astron IX (Feb.)	t.b.a.

Comma Vid

Fits Atari

Cosmic Swarm	28.86
Room of Doom	28.86
Mines of Minos	28.86
Mission Omega	28.86
Underworld	28.86

Tigervision

Fits Atari

King Kong	23.86
Jaw Breakers	23.86
Treshold (Sept.)	18.86
River Patrol (Aug.)	18.86
Marauder (Oct.)	18.86

Thorn/EMI

Fits Atari 400/800 Computers

Cube Puzzle	t.b.a.
Submarine Commander	t.b.a.

Telesys

Fits Atari

Cosmic Creeps	t.b.a.
Fast Food	t.b.a.
Coconuts	t.b.a.

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Fits Atari 400/800 Computers

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Fits Atari and Commodore

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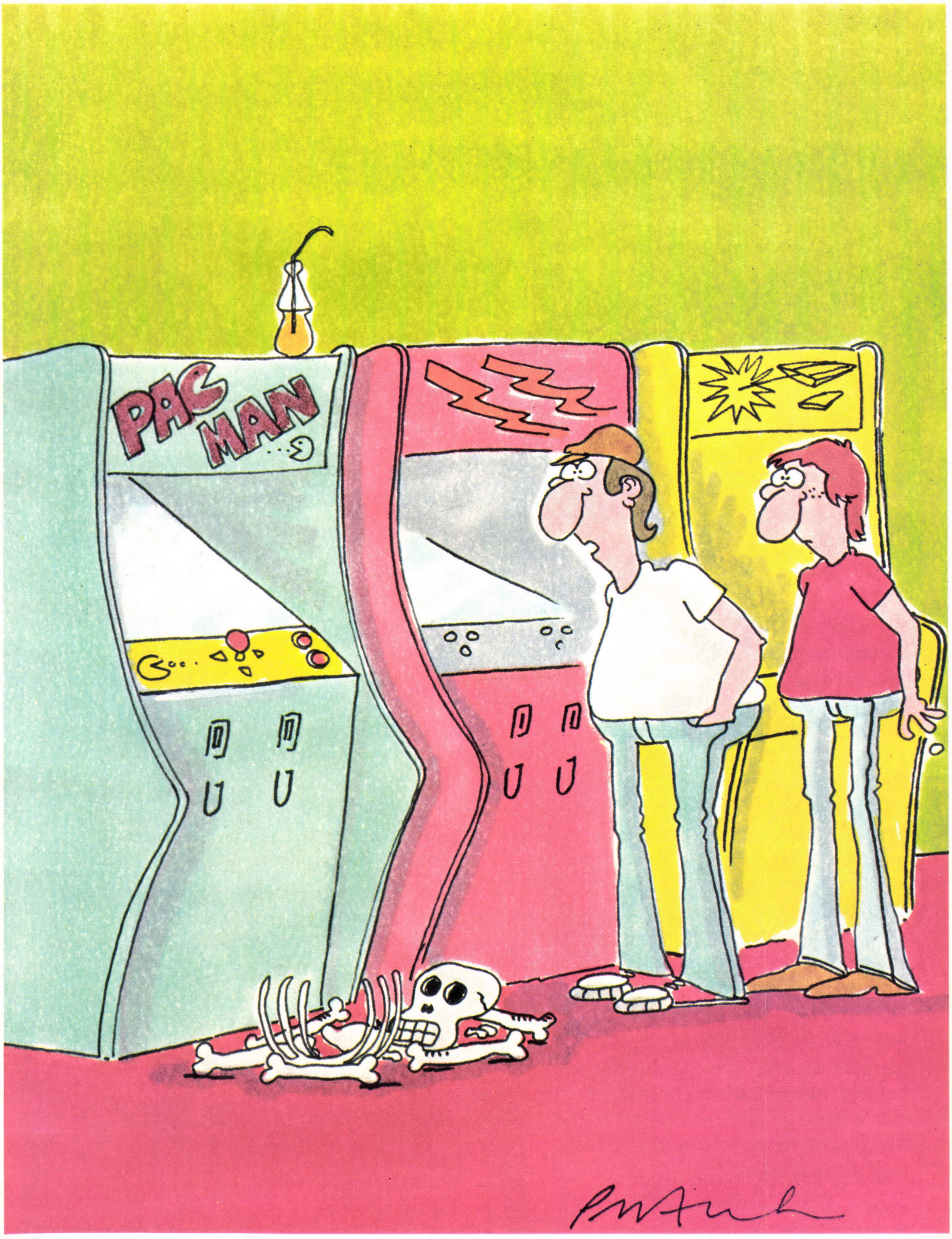


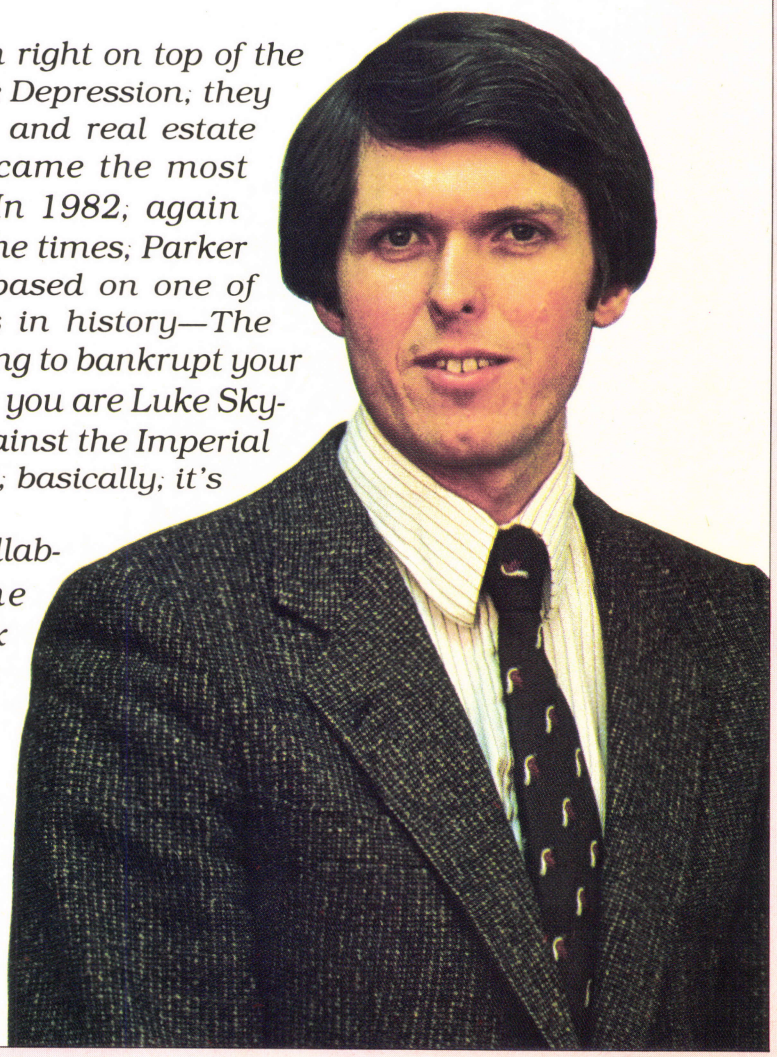
"LOOKS LIKE BILLY GOT EATEN"

Gamemakers:

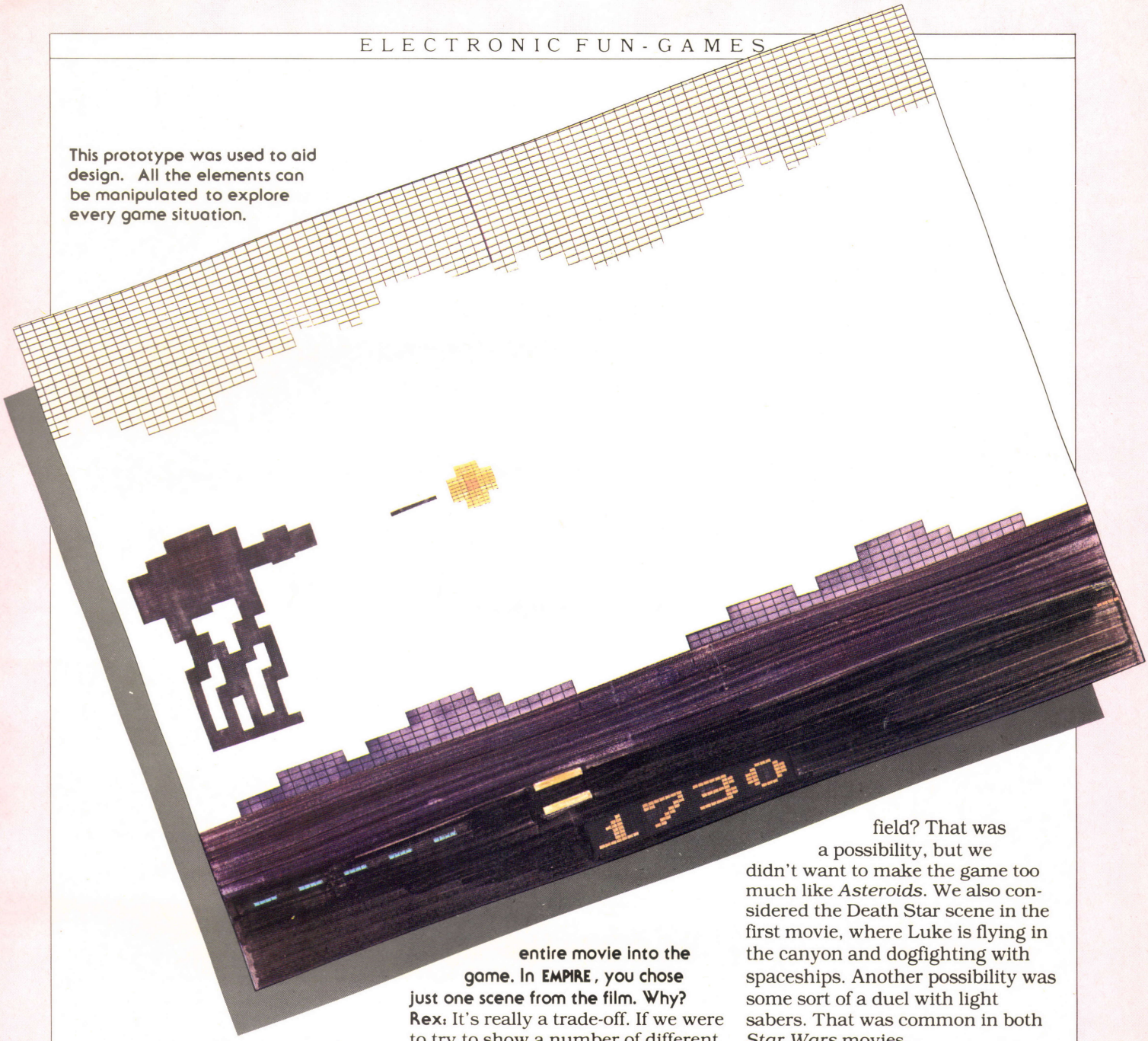
The Empire talks back

*Parker Brothers has always been right on top of the times. In 1921, in the depths of The Depression, they released a game based on money and real estate and capitalism—*Monopoly. *It became the most popular board game in history. In 1982, again taking their cue from the mood of the times, Parker Brothers released a video game based on one of the most popular motion pictures in history—The Empire Strikes Back. Instead of trying to bankrupt your opponent and steal all his property, you are Luke Skywalker flying your snowspeeder against the Imperial Walkers on the ice planet Hoth. But, basically, it's the same theme—kill or be killed.*

The Empire Strikes Back *is a collaboration between two men in the Parker Brothers design team—Rex Bradford and Sam Kjellman.* Empire *is now one of the biggest-selling home video cartridges in the country. We talked with the designers recently about the making of the game.*



Video game designer Sam Kjellman developed the scenario and designed the figures that became **THE EMPIRE STRIKES BACK**. Rex Bradford (turn page) did programming.



This prototype was used to aid design. All the elements can be manipulated to explore every game situation.

By Dan Gutman

EF: It must be difficult for two people to collaborate on a video game. Who writes the words and who writes the music?

Sam: Well, my job was to come up with a concept based on the movie that Rex could work with. So I would draw sketches of characters and elements of the game, and Rex had to refine and modify those ideas to fit into the graphic capabilities of the Atari system.

Rex: Since this was the first Parker Brothers game, a great many people helped on both ends.

EF: On RAIDERS OF THE LOST ARK, Atari elected to combine elements from the entire movie into the game. In EMPIRE, you chose just one scene from the film. Why?

Rex: It's really a trade-off. If we were to try to show a number of different scenes from the movie, we would have had to sacrifice much of the action and speed of the game. It uses quite a lot of computer space to show different "rooms" and things, and we felt it was more important that the game be fast and exciting, instead of full-length.

EF: Did George Lucas have much input?

Sam: Not directly. The relationship that we had was that his company had to approve both the original concept and the finished product.

EF: Other than the battle on the ice planet Hoth, did you consider using any other scenes from the movie?

Sam: Yes. Do you remember the scene in the movie where Luke and Han are flying through the asteroid field? That was a possibility, but we didn't want to make the game too much like *Asteroids*. We also considered the Death Star scene in the first movie, where Luke is flying in the canyon and dogfighting with spaceships. Another possibility was some sort of a duel with light sabers. That was common in both *Star Wars* movies.

Rex: And we *did* also think of trying to encapsulate all these scenes into one game, but that ran into a brick wall. Unless all the scenes share action and graphics to a certain extent, it's impossible to do that sort of translation because you have a limited amount of memory to work with. We were really breaking in the Atari system, trying to see how far we could push it. Until you do a lot of programming, it's hard to tell what you can and cannot do.

EF: What sort of things would you have liked to program into EMPIRE, but were unable to?

Rex: I could probably drag up a list of a hundred things that never made it to the final game. One thing

we planned was to have underground tunnels at the foothills so you could fly the snowspeeders in there, pick up bombs and then fly out and drop them on the Imperial Walkers.

Sam: We also would have liked to do something with ropes at the back of the snowspeeders, so they could fly around the Walker and make them fall down. Then there's the mysterious power generator . . .

EF: The power generator that you are defending, but you never see.

Rex: Right. It's imaginary. We did plan on having a power generator on the screen, and it would have been very nice visually, but by getting rid of it, we were able to have other elements in the game.

EF: Like what?

Rex: It's hard to make a one-to-one trade-off, but the smart bombs might be comparable. If we had eliminated the smart bombs, we probably could have put the power generator in.

Sam: *Empire* was a very complex game. If you take a look at most games for the Atari, they take place on a static playfield. Just to make it into a scrolling panoramic view is very complicated. It takes a tremendous amount of code just to put the radar band on the screen.

EF: What about the sounds and music?

Rex: There is the potential for about 80 different sounds on the Atari. There are two sound channels and I tried to use them to the maximum benefit. You'll notice that if there is a lot of shooting going on, the sound of the Walkers marching drops out. So you get a real panoramic firing sound instead of just a plethora of bullets. The sound is one of the things I'm most proud of in the game.

EF: I thought the music telling you "The Force is with you" was very good.

Rex: You really have to drag music out of the system. It doesn't have a musical scale built into it. You have to take the tones you want to try to find the best fit of frequencies. Actually, *Empire* was the first time more than three or four notes were put together in an Atari game. One of the other Parker Brothers designers, Ed English, did us one better when he designed *Frogger*. It's the first home video game that has two-part harmony.

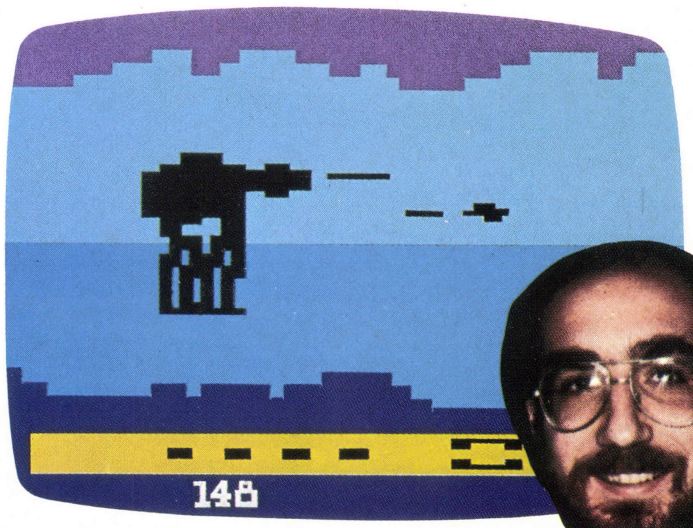
EF: What is a good score in EMPIRE?

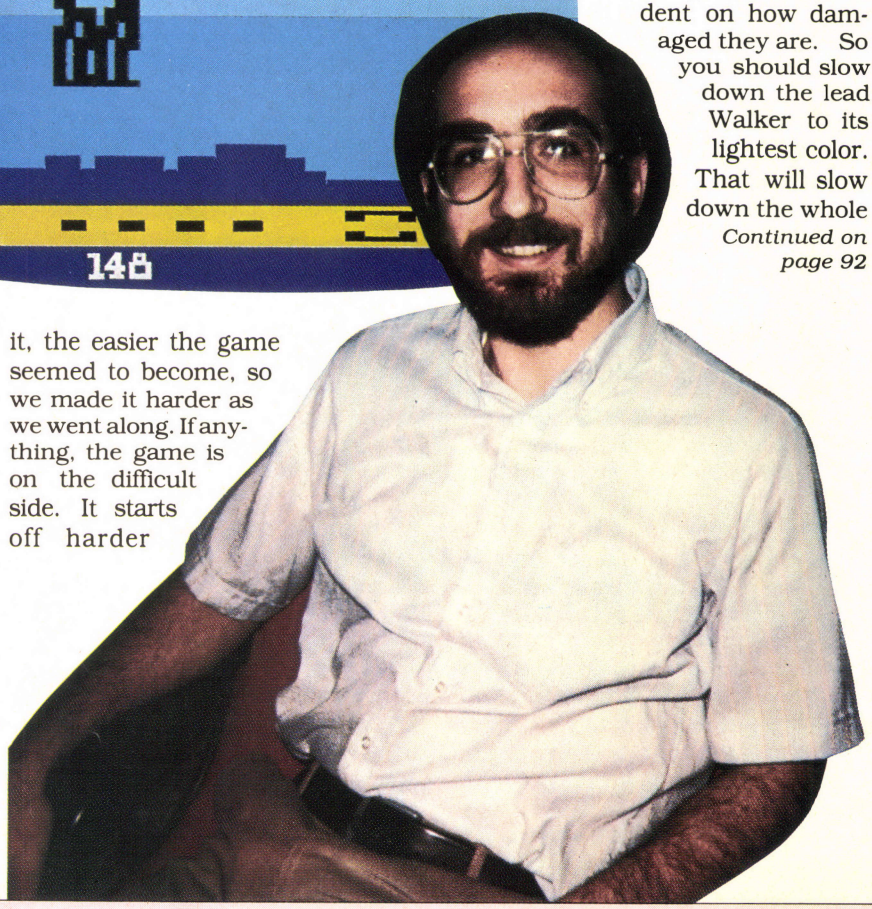
Sam: The best I have gotten is 3,500 on the highest level of the game. But actually, anybody who scores over 500 is doing pretty well. Naturally, as we were designing it, we played it, and the more we played it, the easier the game seemed to become, so we made it harder as we went along. If anything, the game is on the difficult side. It starts off harder than most games. A lot of people find it difficult to control the snowspeeder in the beginning. But once you learn how to do it, it becomes a very fluid motion.

EF: Can you give us some tips to high scores?

Rex: Sure. The way I generally approach it is to fly in a clockwise looping pattern in front of the Walkers. This way, you're moving up and down at the same time. The response time of the Walkers is slower than the speed you can fly. So when you fly up, he responds to where you are, but by the time he can do anything about it, you have looped down and punched off a lot of shots. Also, if you fly in a looping pattern right in front of the Walker, when his bomb hatch opens up, you have a decent chance of hitting it and destroying it with one hit. In terms of an overall strategy, one of the things you'll find very useful is that the Walkers' speed is dependent on how damaged they are. So you should slow down the lead Walker to its lightest color. That will slow down the whole

Continued on page 92





Rex Bradford was responsible for translating Sam Kjellman's concepts into the finished game.

SWEATY PALMS GUARANTEED! **5 EXCITING NEW GAMES!**

US GAMES NEWS

EARTH DOOMED?

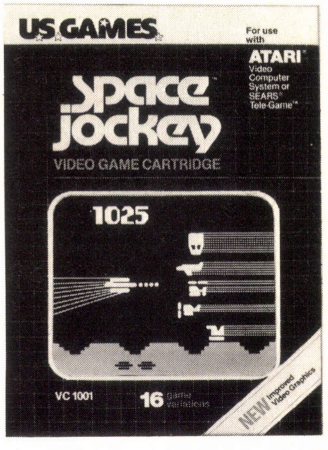
LONE SPACE JOCKEY FIGHTS BACK!

With every human attack weapon captured by alien forces and turned against Earth, surrender seemed inevitable... until you captured one of the alien attack saucers!

Screaming through the atmosphere, you cut forward and back, up and down to escape relentless alien firepower. You blast back, firing directable missiles into alien planes, tanks, and other obstacles.

Can you beat the aliens with their own machine? You can... if you're fast enough, if you're accurate enough, if you're good enough.

★ ★ ★



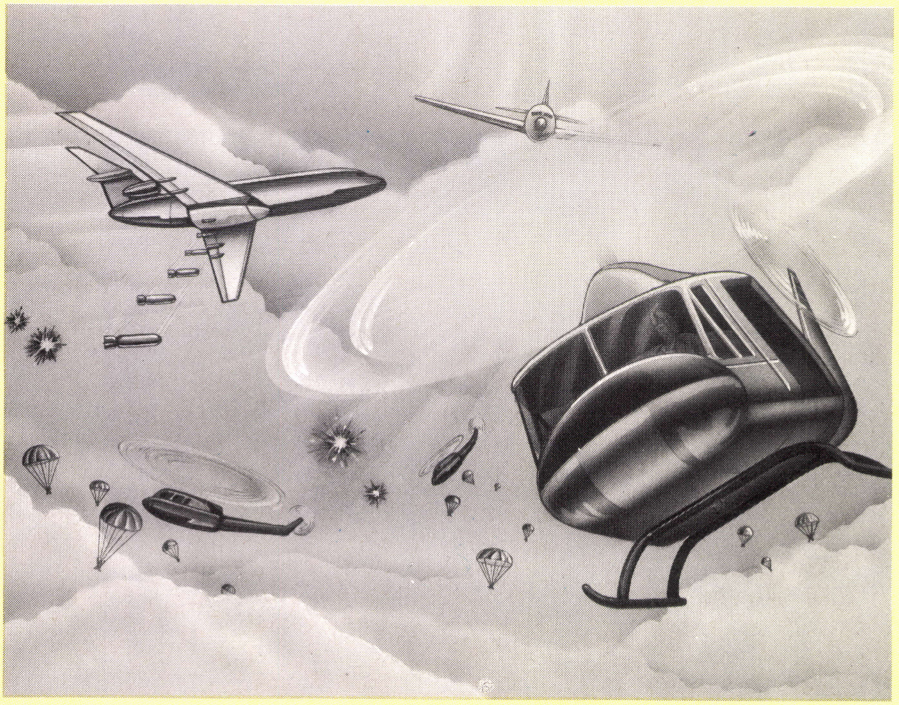
Can you beat the aliens at game level 16?

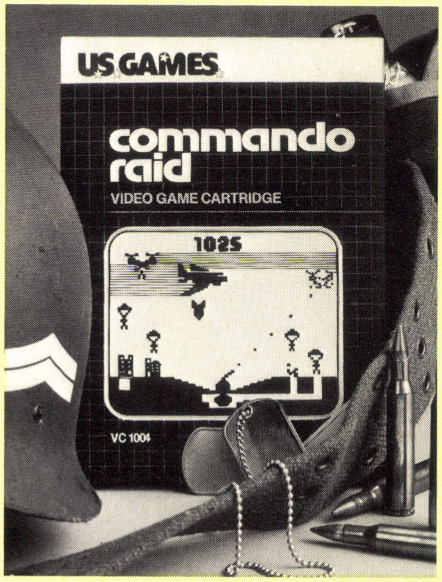
ANDROID RAIDERS ATTACK!

HOT GUNNER COULD SAVE CITY!

With attack choppers dropping android commandos and fighter-bombers delivering payload after payload, our city would be destroyed by now if it weren't for one brave gunner... you.

Only your quick eye and quicker trigger finger can hold off wave after wave of android parachutists. Only your skill can keep them from tunneling under the city and taking you out. The game is Commando Raid, and you're the city's last hope.

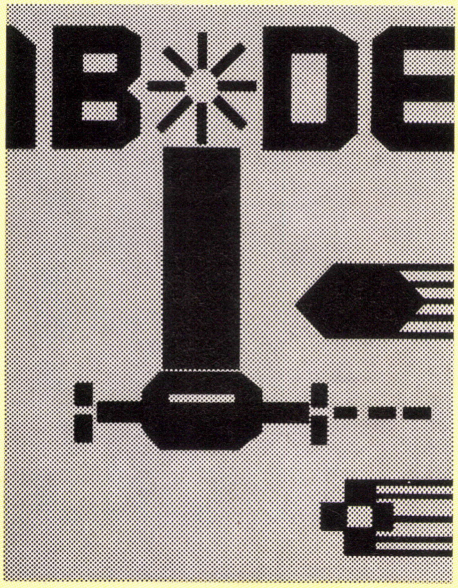




The action gets faster with each commando attack wave!

★★★

ZAPPER A FAST BLAST!



HOT GAME CHALLENGES THE BEST!

Just when you think you've thought fast enough, you've got to think faster! You've got to fire left and right to zap deadly asteroids... one hit by the Doomsday asteroid and your saucer blows!

But that's just defense! To win you've got to fire overhead with incredible skill to blast away the letters of the alien's language. And it will only work if you follow the computer's lead. Can you beat Word Zapper through all 24 games? Can anybody?

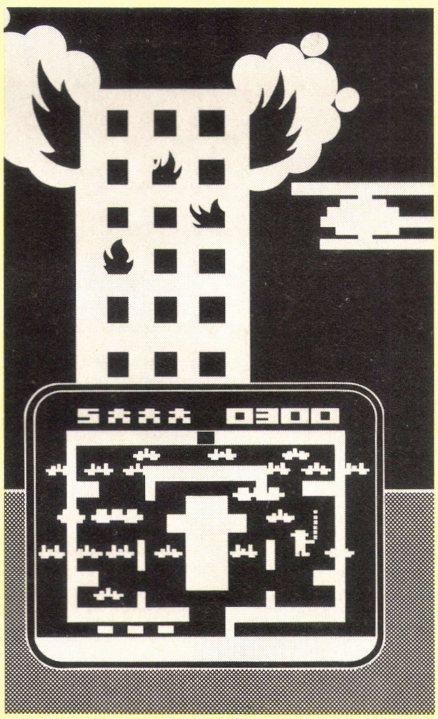
Why is Ronald Evans smiling? Did he beat the zapper?

FIERY DISASTER AVERTED!

BOLD FIREFIGHTER SAVES HUNDREDS!

It was the worst fire you'd ever seen... a high-rise going up like a torch. With a different fire-filled maze on every floor. And hundreds with no way out... unless you could get them out to the rescue chopper.

It's a race against time and the fury of fire that can destroy innocent occupants... and you! You're the firefighter... do you have the skill and strategy it takes to beat Towering Inferno?



Relive the movie in this challenging maze game!

★ ★ ★

MISSING PERSON MYSTERY SOLVED!

ENTIRE FAMILY CAUGHT UP IN SEARCH.

Four different rooms with lots of sneaky places to hide.

It seems simple enough... somebody disappears, and you find them. But this is a spooky video world, with electronic hidey-holes that happen where you least expect!

You can seek a friend or family opponent... or take on the computer! You've got to beat the clock, or your Sneak 'N Peak opponent has you dead to rights!

★ ★ ★

SWEATY PALMS ARE GUARANTEED!

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E.T. Times

VOLUME ONE, NUMBER THREE JANUARY 1983

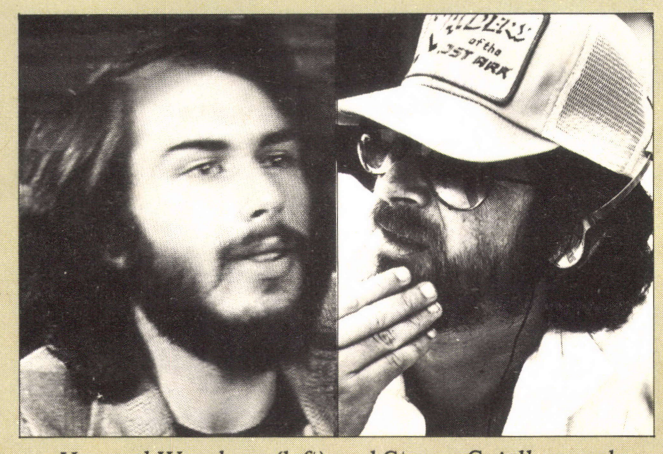
SPIELBERG HELPS DESIGN NEW E.T. GAME

Rather than simply giving Atari permission to turn *E.T.* into a game, Steven Spielberg was directly involved in all aspects of the design work. Spielberg, who has directed four of the biggest movies in history (*Jaws; Close Encounters of the Third Kind; Raiders of the Lost Ark* and *E.T.*) is a fan of video games himself, so it was only natural that he participate in the creative process of an *E.T.* game.

The game's chief designer, Howard Warshaw, also designed Atari's *Raiders of the Lost Ark* game. "The two worked very well together," said Atari's Ron Stringari, "and Steven was over here every week to help on the game."

Spielberg's involvement didn't end with the final touches of the game. At Atari's suggestion, he completed the storyboard for the television commercial and went so far as to choose the director, cinematographer and camera operator also.

Right now, we know that Steven Spielberg is hard at work on *Raiders of the Lost Ark II*. Perhaps we can expect another Warshaw/Spielberg collaboration by the end of 1983.



Howard Warshaw (left) and Steven Spielberg collaborated on Atari's new E.T. *game for the VCS.*

E.T. PHONES ATARI!

Thanks to Atari and MCA, the planet's most popular extraterrestrial is here, and this time he's staying at your home. The new *E.T.* game ($39.95) is, according to director Steven Spielberg, "the first emotionally oriented video game ever produced." It is also the biggest single licensing agreement MCA has signed for the little guy, and there have been 50 of them for products as diverse as T-shirts, bicycles and E.T. underwear.

E.T. *TV commercial.*

Although we expected the game to revolve around Elliott and his quest to get E.T. home, in Atari's plan, you *are* E.T. himself. Using a joystick, you must search the six possible "sites" to find pieces of your phone and get home. Along the way, you are chased by FBI agents and scientists, you eat Reese's Pieces, crane your neck, fall into caves, levitate, heal flowers and, of course, score points. When all seems hopeless, even Elliott runs out to revive you. The game incorporates almost all the important elements of the movie.

E.T. is compatible with the Atari VCS. A coin-operated version of the game should be in the arcades shortly, as well as a version for the Atari 400/800 computer.

Defender — For $18.95

You probably have some cartridges laying around that you don't play anymore—games you've mastered, games you got tired of. Well, why don't you trade them in for some other ones? Forest Hills Used Video Game Cartridges is the largest dealer in the country. They have an inventory of more than 2,000 carts that they sell for between $4.95 and $18.95. And they'll buy those old games from you for $2 to $9, depending on the popularity of the game. Contact them at: 63-56 108th St., Forest Hills, NY 11375.

Bushnellvision in 1983?

The hottest rumor of the year is that Nolan Bushnell, the inventor of *Pong* and founder of Atari, will be getting back into the video games business this year. It seems that Mr. Bushnell, when he sold

Nolan Bushnell and Chuck E. Cheese

E.F.G. Times

Atari to Warners, agreed not to put out any products competitive with Atari . . . until 1983. Word is out that Bushy is back—with a new system that will rock the video game world. We're waiting.

Pictured on the previous page are Nolan Bushnell and his present endeavor. Chuck E. Cheese of Pizza Time Theater.

Are they serious?

Are You A Twerp?

Siriusly, there's a new game for the Apple II called *Twerps*. Released by Sirius Software, you, as Captain Twerp, must rescue nine of your Twerp space crew before the dreaded Gleepnok (a giant drooling mouth) gets you.

Another winner from Sirius is *Beer Run*, in which you must climb the Sirius Building and catch bottles of Oly thrown from the roof. *Beer Run* ($29.95) is for the Apple II also, and was designed by 20-year-old Mark Turmell (see November EF and *Making Your First Million*).

CA Beats NC In Inter-State Championship

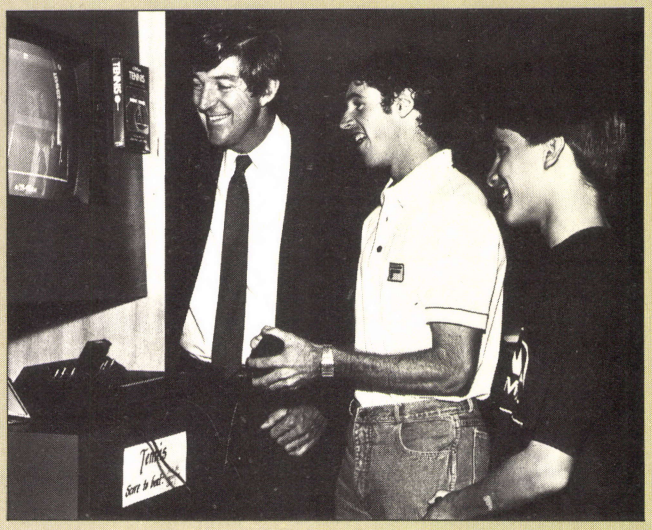
They say that people in California are laid back, but when a group of West Coast video athletes got wind that North Carolina produced the highest scores in the country, they got *angry*. So they did what any red-blooded American arcaders would do—they challenged North Carolina to a war. The result was a weekend tournament that took place at Phil's Family Amusement Center in California and Light Year Amusement Center in North Carolina.

More than 100 contestants, playing 18 arcade games, went at it—and when the dust had cleared, California came out ahead, 10-8, and eight world records were set. For most of the contest North Carolina held the lead, but with 35 minutes left, California's Robert Wycoff zoomed to 1,407,000 points on *Zaxxon*, winning the tournament. Other world records set: *Centipede* (12,311,126, Mike Baird), *Robotron* (112,000,000, Eric Ginner), *Tron* (3,195,329, Sterling Ouchi) and *Pac-Man* (5,999,820, Sam Blackburn).

The event was organized by Walter Day, of Twin Galaxies International Scoreboard. High scorers, call (515) 684-6421.

Monthly Contest!

Each month we pick a home video game and award a free cartridge to the reader who achieves the highest score. To enter, send a clear photo of your score on a TV screen. The highest score we receive by January 10, 1983 will be the winner and he or she will receive the cart of their choice. This month—*Berzerk*. Send entries to: *January Contest, Electronic Fun, 350 East 81st* St., New York, NY 10028. Good Luck!



Even video tennis is good for your forearms

Ball Boy Whips Tennis Champ

Sixteen-year-old Brian Robinson recently trounced the eighth-ranked tennis player in the world, Eliot Teltscher. But they weren't playing on center court—they were playing on a TV screen. Activision sponsored this little tournament of Activision *Tennis* during the $250,000 Transamerica Open tennis tournament at the Cow Palace in San Francisco. Robinson, a ball boy for the tournament, whipped a helpless Teltscher 6-0, to win a complete 18-game cartridge library from Activision.

Arcade Penguins

The graphic quality of video games is getting as good as cartoons, as

Sega's Antarcticade

E.F.G. Times

evidenced by *Pengo*, the new one from Sega. In *Pengo*, you are a red, white and blue penguin who must attempt to line up diamond ice blocks while being pursued by deadly Sno-Becs. You receive 400 points for every Sno-Bee you squash with ice blocks and a whopping 1,600 points if you squash two at once.

It just goes to show that the video game manufacturers will go to the ends of the earth for a good game.

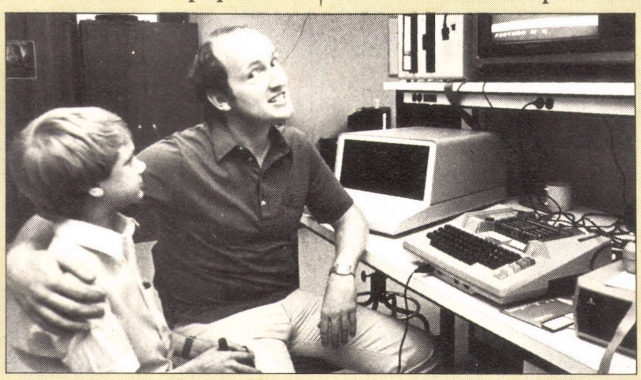
Pac-Man Rip Offs Get Gobbled

Two Hong Kong companies, Video Technology and Soundic Electronics, have been hit with copyright infringement suits by Atari, which owns all rights to home versions of *Pac-Man*. The Hong Kong companies recently released Pac-clone games with the titles *Crazy Moonie* and *Puck Boy*. And we thought only American companies were making knockoffs.

Crazy Moonie—sounds like a good idea for a game. See, you're this Far-Eastern cult fanatic who has to run through an airport and sell all his flowers before getting hit by flying luggage . . . Nah.

Meet a 10-Year-Old Video Guru

Rawson Stovall is a normal 10-year-old boy. Last year he wanted to buy a video game system, so he set up a backyard business selling "Princely Pecans" door-to-door. Now Rawson writes a weekly column, "The Video Beat" in three Southwest newspapers. In the column he lists local high scores, gives video game strategy tips and evaluates new games. He is pictured here with Imagic's Dennis Koble, who designed *Atlantis*.



Dennis Koble (Atlantis) and Rawson Stovall

Sip and Puff Tournament

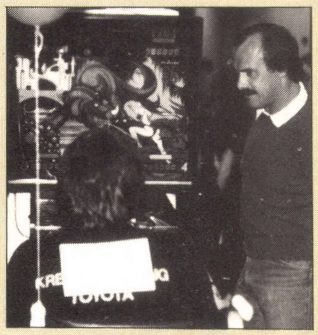
We take our joysticks and flipper fingers for granted, but some people aren't so lucky. For a boy or girl with cerebral palsy or paralysis, the idea of hitting a fire button is only a dream.

That's why Gary Marince invented "Sip & Puff," a way to adapt video and pinball games so they can be played by a person who has control of just one part of his body. Pictured here is Pittsburgh Steeler great Rocky Blier chatting with a contestant in the Fourth Annual Sip & Puff Tournament in Pittsburgh. Over 130 contestants entered the tournament, many of whom were able to play by using one finger, one toe, or a puff of air.

Quote Of The Month . . .

"If at first you don't succeed, hit reset."

David Jackson, 15
Portland, Oregon

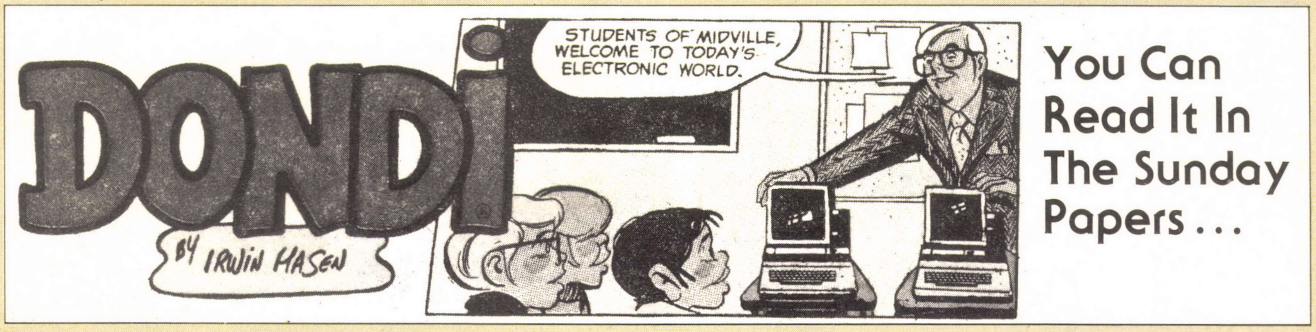


Rocky Blier

Free Money From U.S. Games

Time is almost up, but it's not too late to get in on the rebate plan offered by U.S. Games. Until December 31, if you buy any U.S. Games game—*Space Jockey, Word Zapper, Sneak 'n Peek, Commando Raid* or *Towering Inferno*—you can get $3 back if you send in your sales slip and the bottom flap of the game box. U.S. Games carts are compatible with the Atari VCS.

Have you got an item for the EFG Times? News events, game tips, photos and other information are gladly accepted. Send material to: *Electronic Fun, 350 E. 81st St., New York, NY 10028*. Sorry, submissions cannot be returned.



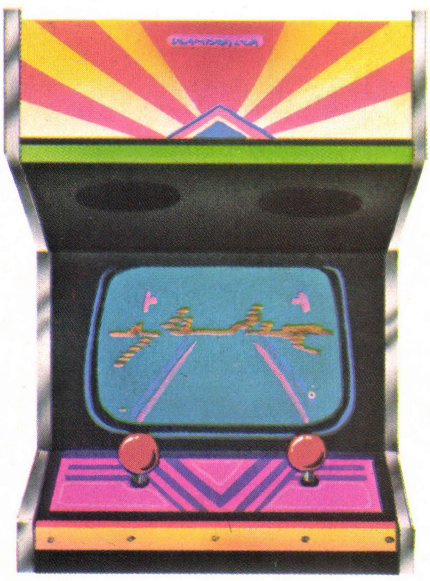
You Can Read It In The Sunday Papers . . .

Now we know the computer generation is here to stay.

A $300 arcade game?

By Ted Iacobuzio

Let's suspend reality for the moment and pretend you have about $300 to spend. You've been wanting a video game system but don't entirely trust the home video game advertisements that promise to "bring the arcade action home!" Well, for $300 you can forget about bringing the arcade action home . . . You can bring the arcade home.



You don't have to have an uncle in the arcade business to be able to afford an arcade game of your own. If you're a careful shopper and you've got some money salted away, you can, without too much trouble, install a real, live, used arcade game in your own home. And you can do it for as little as $300.

Buying used arcade games is not a new concept. Actually, people have been buying used games for years, but it wasn't until recently that it developed into a big business. There are, in fact, several ways you can go about buying one—straight from the arcades, through auctions or through professional distributors. Let's handle the pros and cons of each one at a time.

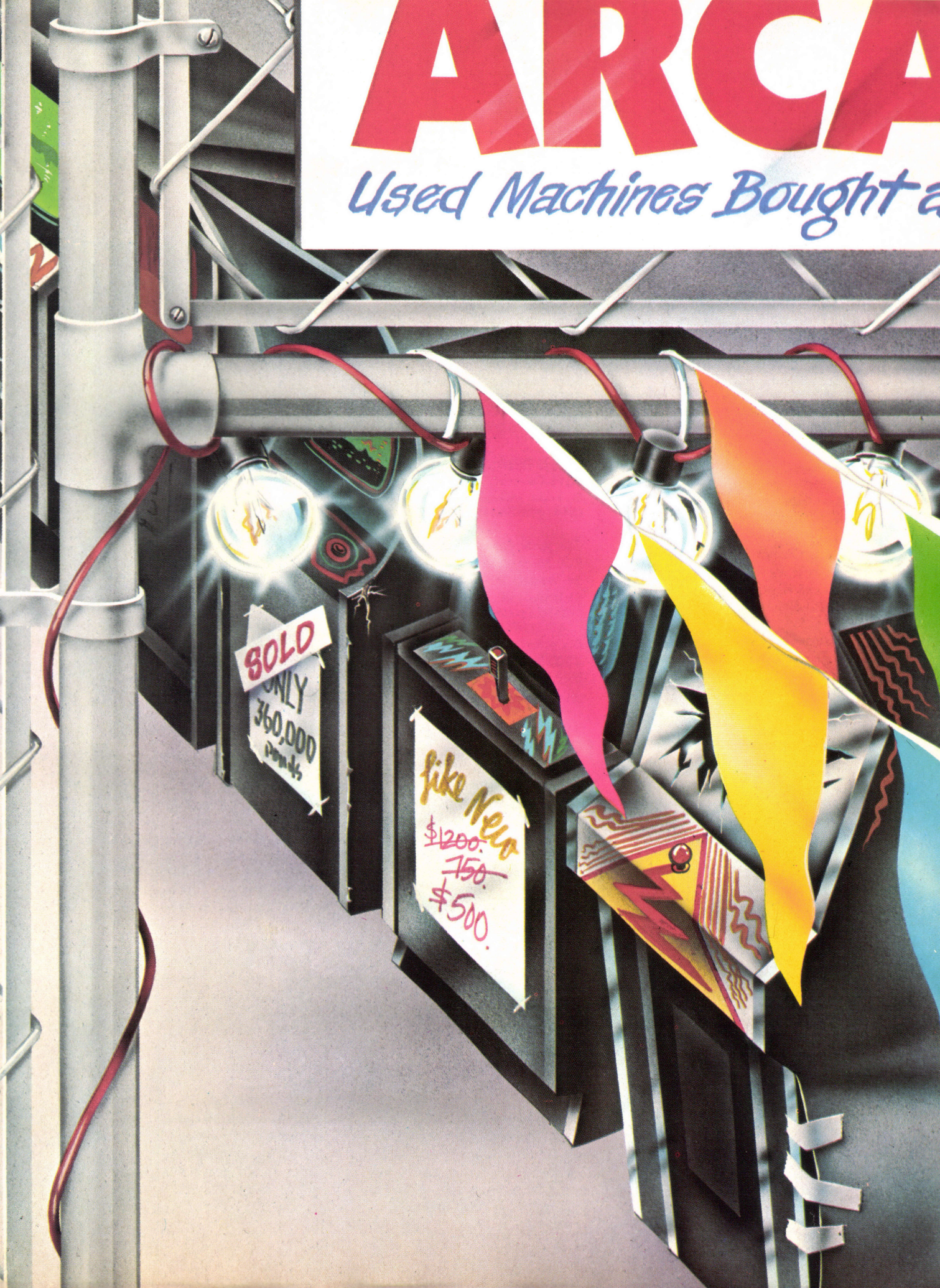
But first, before you dash out and buy any old arcade game, it might be wise to ask yourself the following questions:

- Do I have a three-pronged, grounded electrical outlet in my home? (Adapers won't do. They can cause anything from program glitches to complete game failure.)
- Do I want to use quarters to operate the machine or do I wish to simply press a button each time I want to play? (This, I feel, shouldn't be too difficult a decision. It only requires a simple adjustment that the dealer can easily make for you.)
- How fast do I want to the game to play? (Either the dealer can adjust the speed or show you how to do it.)
- How much does the dealer charge for service calls after the warranty runs out? (Warranties generally last from 30 to 90 days. After that, service could become a problem depending on the age of the game. Most service calls cost in the neighborhood of $15.)

Now to get down to the actual purchase. The best place to buy a used video game is from a professional distributor. The good news is that these places generally offer you a completely refurbished machine, in excellent working condition and with a trustworthy service contract. This last, you should know, is a very important consideration. Remember, most arcade games will have taken some brutal punishment in their brief lives, and you'll need to have some sort of reliable warranty and repair policy in the event that it should, God forbid, break down.

The bad news is that along with the reliable service comes a slightly higher price. After all, refurbishing costs the dealer money and that will be reflected in the price you pay. But, in my opinion, it's worth it not to have to worry.

And, although you *can* get a used arcade game for as little as $300—or even $200—don't expect to breeze in and pick up one of the most popular titles at such a low, low price. If you want to own a really hot game, you've got to be prepared to pay a


ARCA
Used Machines Bought a
SOLD
ONLY
360,000
points
like New
$1200.
750.
$500.

Though all sorts of outlets sell used arcade games to consumers, very few offer a warranty, a service plan and reconditioned machines. Here's a selective list of some arcade game distributors which do offer these services to consumers. As we said before, if none are located near you, check the Yellow Pages under "Amusement Devices." And look before you leap.

Sal's Distributing
3807 N. 35th Ave.
Phoenix, AZ 85017
(602) 233-0676

Games Unlimited
9059 Venice Blvd.
Los Angeles, CA 90034
(213) 836-8920

Belam Florida Corp.
1541 N.W. 165th St.
Miami, FL 33169
(305) 621-1415

Peach Tree Home Recreation
2675 Peach Tree Square
Doraville, GA 30365
(404) 455-6050

Bally Midwest Inc.
2828 No. Paulina
Chicago, IL 60657
(312) 871-7600

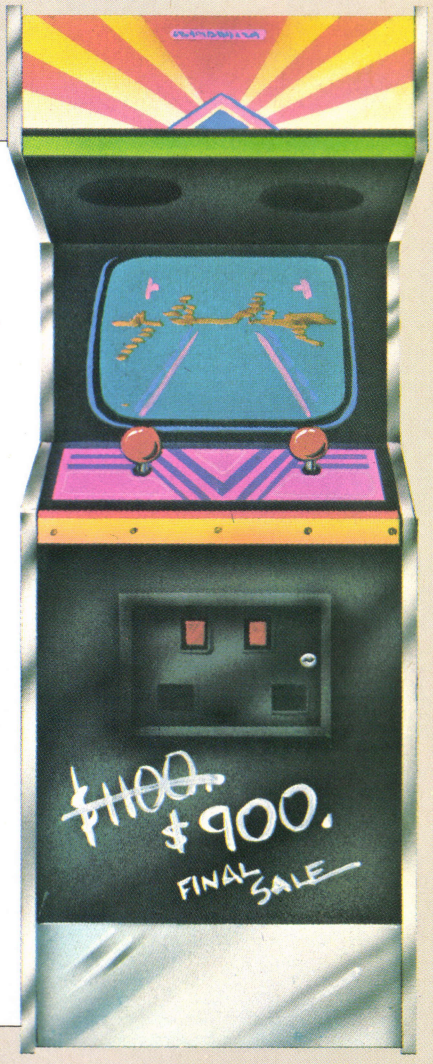
Bally Northeast Distributors
1400 Providence Highway
Norwood, MA 02062
(617) 762-9300

Central Distributors
2315 Olive St.
St. Louis, MO 63103
(314) 621-3511

Computer Earning Games
P.O. Box 1687
51 Monroe St., 18th Floor
Rickville, MD 20850
(301) 251-1200

Dixie Amusement Inc.
2803 Pass Road
Biloxi, MS 39531
(601) 374-2681

Alpha-Omega Sales Co.
3 Coral St.
Edison, NJ 08837
(201) 738-1800



little more. A used *Pac-Man* game, for example, can run as high as $1,800. That might seem steep but it's still substantially below the price it sells for new.

If $1,800 puts a little too much strain on your purse strings, consider investing in a "Golden Oldie." A reconditioned *Asteroids Deluxe*, for instance, can be bought for a $595 song. And just because it's no longer on the Top Ten list doesn't mean it's not worth owning. Aside from the fact that it is a very exciting game, think of the nostalgia quotient—in a few years it could become a collector's item.

If you're really just interested in low price and don't care about service warranties, then an excellent place to start shopping for an arcade game is an arcade itself. Many arcades have adopted the practice of selling machines that are no longer in the Top Ten. The Chuck E. Cheese chain, to name just one, offers a considerable selection of used video games and the prices can be astoundingly low—only $300 for a used *Asteroids* game.

Another market for unrefurbished games is auctions. You can often find these listed in the classified ads section of your Sunday paper. At an auction, prices can go even lower—if you can believe that. Some games—such as the popular *Space Invaders*—have been known to sell for as little as $200. That's less than you have to pay for some home video game systems.

Other games that are available at reasonable prices include *Star Castle* ($450), *Skydiver* ($295), *Super Cobra* ($595), *Scramble* ($750), *Sea Wolf II* ($300) and *Galaxian* ($550).

Although all of this may sound very tantalizing, there are a few caveats that I feel I should throw in here for your own good. I know that sounds very parental but read it anyway. It could save you a lot of aggravation later.

• When buying directly from an arcade, remember that you're carting off a machine that may have taken as much as two years of abuse and rough play from a competitive gamer such as yourself. Even if the salesman tries to sweet-talk you by saying "Only 65,000 points on this baby!", keep in mind that this machine has not been reconditioned, carries no warranty and no service contract. Unless you're an electronic whiz kid, it would probably behoove you to

Continued on page 95

a show of hand helds

GameTime marches on

GCE and NELSONIC GameTime, ArcadeTime, SportsTime and Pac-Man

You know it's impolite to keep looking at your watch, but we forgive you. After all, you're playing one of General Consumer Electronics' *game* watches, and we defy anyone out there to turn these nifty challengers off after only one round.

GameTime, GCE's first issue, was a positively pioneering move into wrist adventure. The four space-type shoot-'em-ups—*Firing Squad, Missile Strike, Alien Assault* and *Blast Away*—do not in any way duplicate one another. Each offers solid play action and a built-in guard against boredom: multiple skill levels. As *Firing Squad*'s title suggests, you control a prisoner who must dodge a steady stream of bullets hell-bent on wiping you off the face of the watch. *Missile Strike* (my favorite) requires players to fire alternately from a left or right missile base at a target that moves across the top of the screen at varying speeds. Each hit results in a pleasing little dot explosion and a squeaky sound effect, as well as points. *Alien Assault* resembles *Space Invaders,* where you have to dash back and forth across the screen's bottom, simultaneously firing at and avoiding alien bombs as your enemy drops lower and lower into your turf. Get hit by three bombs and you're out.

Finally, *Blast Away* is a wrist version of *Breakout.*

With ArcadeTime and SportsTime, GCE's latest $40 watch releases, playfield graphic have undergone enormous improvement. Gone are the dot and circle enemies. Instead, GCE has produced little animated spaceships, rockets, human-looking players, etc., which, of course, add to the fun. Still more exciting, both ArcadeTime and SportsTime use a miniature joystick instead of a player button to direct the player-controlled movements. The tiny stick is easily manipulated with the tip of an index finger—whose index finger is up to you.

SportsTime contains *Football, Basketball,* and *Soccer.* Although these popular games are each considerably scaled down compared with tabletop or video game versions, they still present challenging play action. When *Football* is selected, a goal post appears on the right side of the field.

Basketball features a basket on the left side of the screen, your player (with ball) and a defenseman.

ArcadeTime has four new space games: *HyperBlast, Planet Raiders, Galaxy Gunner* and *Cosmic Clash.* Varied action sounds enhance game play, or if preferred, a silent mode is available.

The $40 *Pac-Man* watch, from Nelsonic, is hard to resist. Those cute little monsters and, of course, Our Hero, come to life in miniature form right on your arm at the press of a button. The now-classic game features energy food dots, magic fruit, multiple skill levels and sound effects (a mute function for silent playing is also included). The only difference between this *Pac-Man* and the "real" thing is your game button controls: Pac-Man is "stepped" around the play maze by tapping the buttons rather than achieving the smooth motion available with a joystick. The device also sports a musical alarm. A real party watch.□

GAMES ON TV

By Mark Trost

Have you ever turned off your video game system, only to discover *Donkey Kong* still playing away on TV?

Are your video-game-weary eyes playing tricks on you? Is an inferior mainframe leaving a lag effect? Has your little brother been fooling around with the RF converter again? No?! Then we fear something far more menacing than faulty eyesight, bad products or rotten siblings is causing the problem—namely, commercial television.

Yes, TV—specifically prime time and Saturday morning television—has discovered that people are actually interested in video games. Like all the medium's discoveries, its uncovering of the games phenomenon is late and often misinformed. But that hasn't stopped the makers of television programs from using video games as jumping off points for entire series and video game game shows.

Despite the already sizeable amount of air time video games have taken up over the past few months, the three major networks' race to exploit video game popularity is speeding up. The development should come as no surprise to most TV viewers. The tube's voracious appetite for ideas often gobbles up recent events and fads faster than a hungry Pac-Man. Witness this season's influx of *Raiders of the Lost Ark*-inspired series (*Tales of the Gold Monkey* and *Bring 'em Back Alive*). Both use settings, characters and even plots developed in the summer '81 movie smash. You can bet your last power pellet the networks are feverishly working on their respective versions of *E.T.* even as you read this.

The use of video games as plot or subplot devices started as early as last season (lets give credit where credit is due) on *Taxi*. The subplot dealt with the Reverend Jim (Christopher Lloyd) and his addiction to a *Pac-Man* machine installed in the garage by Louie (Danny DeVito). The then unique use of a *Pac-Man* machine on a national TV series when the game was at the height of

TV ON GAMES

its popularity is typical of the creative talents behind *Taxi*. The show has since left references to video games behind—instead they make jokes about Japanese companies stealing computer secrets.

Taxi's isolated reference to video game fever has since given way to a deluge of game-inspired themes and series, with practically every program this side of *Fantasy Island* indulging in a video round of *Centipede*.

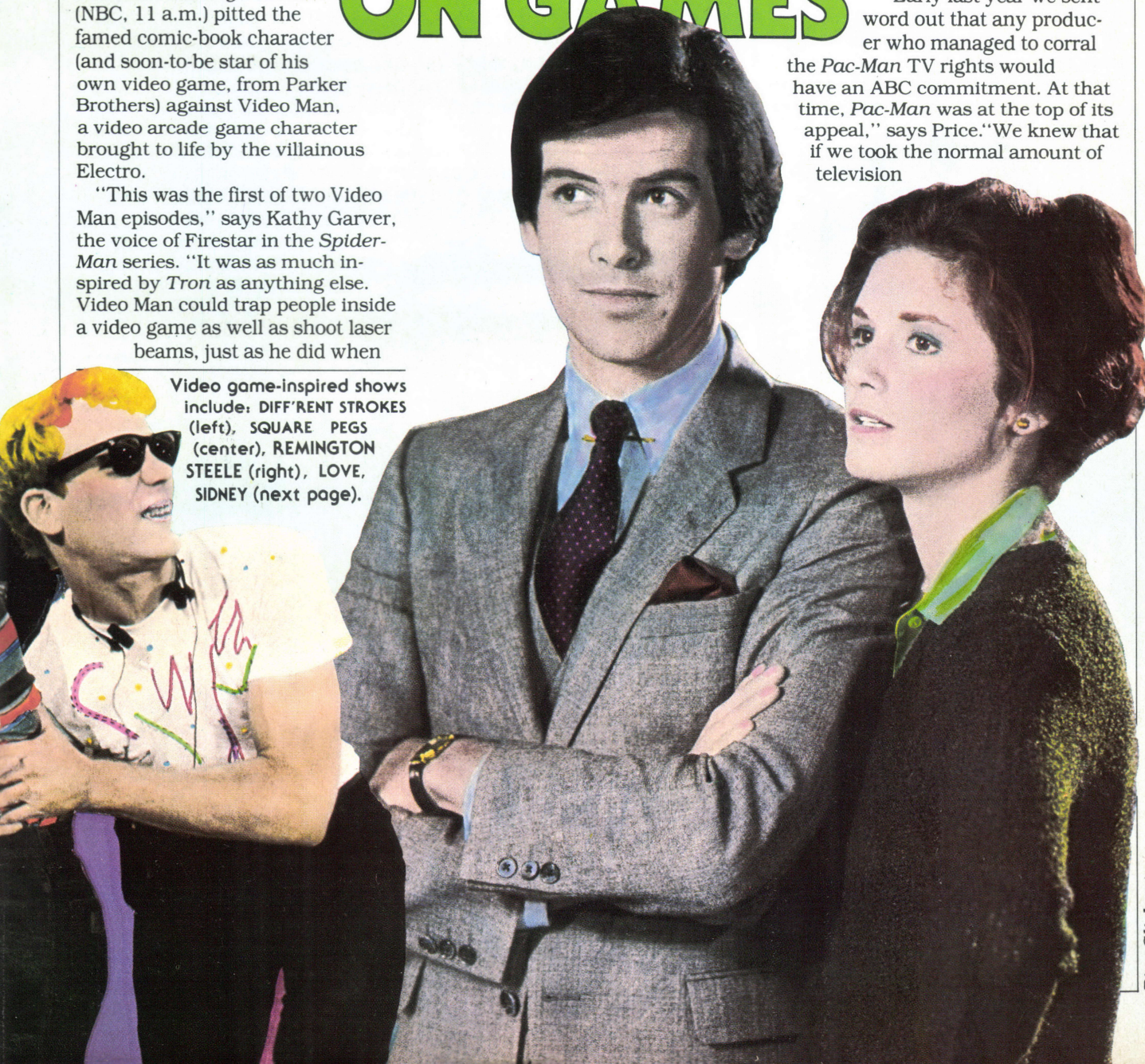
The floodgates opened late last September when the networks kicked off their new Saturday morning programs. The season premiere of *Spider-Man and His Amazing Friends* (NBC, 11 a.m.) pitted the famed comic-book character (and soon-to-be star of his own video game, from Parker Brothers) against Video Man, a video arcade game character brought to life by the villainous Electro.

"This was the first of two Video Man episodes," says Kathy Garver, the voice of Firestar in the *Spider-Man* series. "It was as much inspired by *Tron* as anything else. Video Man could trap people inside a video game as well as shoot laser beams, just as he did when he was a game."

If such a thing as reality has anything to do with it, Video Man was always pictured as two-dimensional in the cartoon show.

Another interesting note is that in the second of the two programs, Video Man goes out of control, setting free other top video game characters, including a monster-sized version of Pac-Man and various *Space Invader* look-alikes. The next week, ABC unveiled an entire series starring none other than the famed jaundiced ball itself. The yellow gobbler has since gone on to overtake the Smurfs as the most popular Saturday morning show star. *Pac-Man*'s virtually assured hit status was an important factor in getting the character to the screen, according to ABC children's programming executive Judy Price.

"Early last year we sent word out that any producer who managed to corral the *Pac-Man* TV rights would have an ABC commitment. At that time, *Pac-Man* was at the top of its appeal," says Price. "We knew that if we took the normal amount of television



Video game-inspired shows include: DIFF'RENT STROKES (left), SQUARE PEGS (center), REMINGTON STEELE (right), LOVE, SIDNEY (next page).

Risa Glickman

lead time to get the program to air we'd miss the boat. That's why, when word came from Hanna-Barbera last April that they had the rights, we went immediately to work. We managed to get the show ready in half the normal time."

Virtually everyone in Hollywood had the same idea regarding the video game phenomenon. Right now, it seems that a week doesn't go by without at least one video game-inspired show hitting the airwaves.

The premiere episode of *Diff'rent Strokes* (NBC, October 2, 8 p.m.) used the games as their main focus. Arnold (Gary Coleman), fed up with Willis' boasting, challenged him to a video game showdown of *Space Sucker*. This was immediately followed by the 8:30 p.m. installment of *Silver Spoons* (also NBC), featuring rich kid Ricky Schroeder and a game room filled with nothing less than wall-to-wall arcade games.

And the inspirations keep on coming. Monday, October 11, offered video game followers not only the first incidence of two opposing shows using games as program themes, but also what is undoubtedly the most bizarre treatment of games yet.

At 8 p.m., *That's Incredible* (ABC) aired a *Ms. Pac-Man* championship tournament. Opposing that was an episode of *Square Pegs* (CBS) in which Marshall (John Femia) lost his comic touch when he became "possessed" by a video game. His only hope for salvation: Father Guido Sarducci.

Square Pegs offered one of the fresher approaches to games on TV, with most of the credit going to former *Saturday Night Live* writer and *Pegs* producer Anne Beatts. And speaking of *SNL*, the first episode of the series (September 25), offered an inspired parody of news documentaries by centering on the plight of video game junkies. The spoof exposed 13-year-olds who, like society's castoffs, are forced to wipe windows for *Donkey Kong* money.

Video games are lighthearted unlike the umpteenth version of the Guyana Massacre or the Jack Henry Abbott case.

In the October 22 episode of *Remington Steele* (CBS, 10 p.m.), a *Hart-to-Hart*-style program, Laura and Remington (Stephanie Zimbalist and Pierce Bronsan) had 24 hours to find a video game genius who had vanished with $5 million and his company's latest video game plans.

According to the episode's writer, Lee Zlotoff, who has also written for *Hill Street Blues*, video games are a natural for television material. "If it's in the news, if it's something people can relate to, then television is surely going to use it," he says. "The video game phenomenon is something particularly special. It's more or less a lighthearted field, unlike the umpteenth version of the Guyana massacre or the Jack Henry Abbott case. It's fun and fascinating. All of a sudden you have guys that six months ago were fiddling in a garage playing with a home computer who are now millionaires. It's something everybody is interested in." Zlotoff added that the video game theme is particularly well-suited to shows like Steele because of the program's mystery angle. "The mystery genre itself is just one big game. Trying to find out who the killer is just like any puzzle. So, what could be more appropriate than a mystery show about

a game?"

The veteran TV writer isn't the only one thinking along those lines. A November 3 episode of *Tucker's Witch* (CBS, 10 p.m.) also used video games, via the Tuckers' discovery that a student's computer games may have revealed the reason for a political candidate's suicide.

If you make a few calls around Hollywood, you'll quickly find video game inspiration isn't about to be exhausted. In fact, it's just hitting its stride.

"This is just the tip of the iceberg," says April Kelly, producer of *Teachers Only* and former story editor on such TV sitcoms as *Love, Sidney* and *Mork & Mindy*. "Soon you're going to see video games incorporated into entire programs."

Game Aces

Kelly, who admits a love for the games but a total inability to play, realizes that television was a little slow on the uptake, but says that's par for the course. "No one in television is willing to drive the bandwagon, but when it starts rolling, they all want to jump on it. Almost two years ago I wanted to do a one-hour special on video games, looking at them from all sides and even incorporating a championship where game aces would play celebrities. At that time the executives said they just didn't see a big audience for it. But now they do. Now that everyone in the world realizes what a real field video games are, it's okay to do them.

"This kind of thing happens all the time," she adds. "About five years ago I wanted to do a comedy with country 'n western overtones, but no one would touch it. Now it's the biggest thing, with the *Dukes of Hazard* and such. I trust that one day I'll be in a position where I'll be able to sense what's coming and act on it, instead of waiting for it to be safe."

Kelly points out that it's not always network executives that turn thumbs down on new ideas. "When I was working on *Love, Sidney*, I had a little subplot involving a discussion between Sidney (Tony Randall) and the little girl while she's playing a home video game. They would be constantly in-

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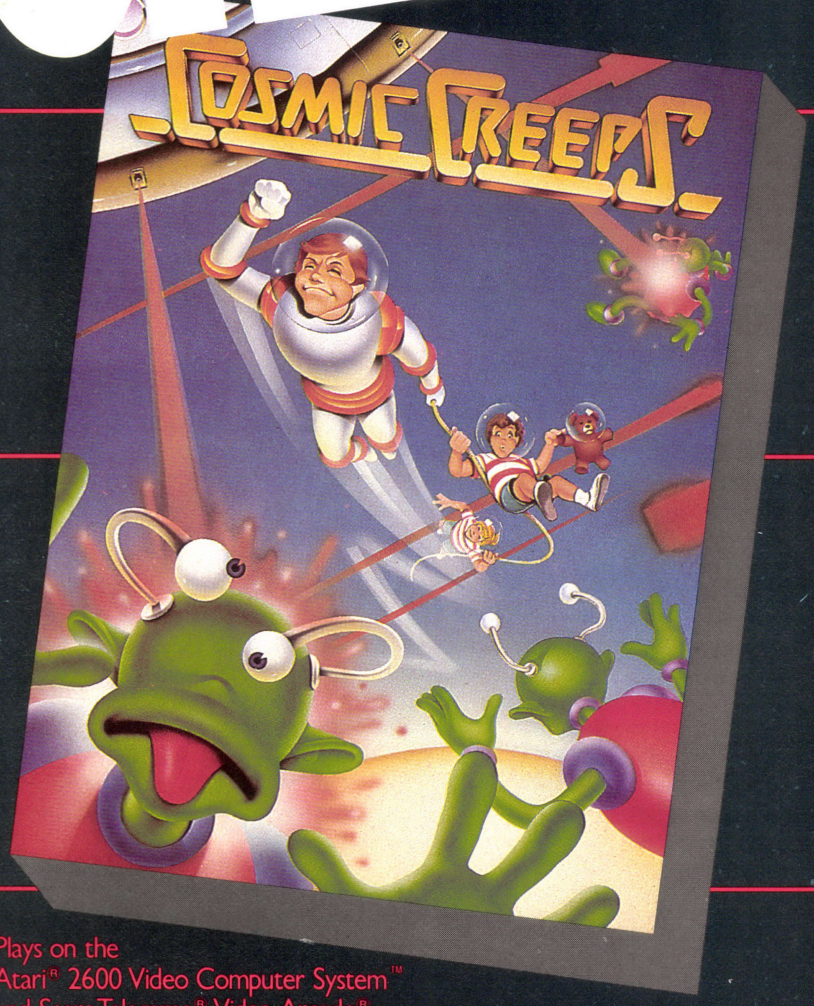
ORB IT!



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Screen plays

King of the jungle: Me Tarzan, you joystick

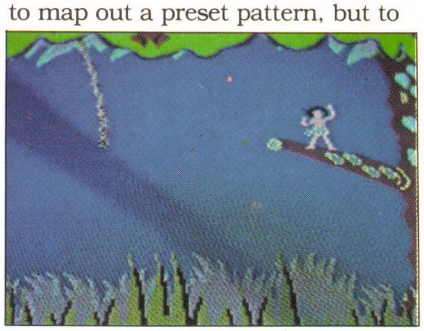
By Michael Blanchet

In the not too distant future, video game manufacturers will face a problem that is currently rocking the music industry—the abscence of fresh ideas and pure inventiveness. A visit to a coin-op trade show, or an arcade for that matter, proves that this prediction is nearing reality. Designers beg, borrow and steal concepts and incorporate them into games they think the public wants to play. True, it's not easy to be totally creative and pay the bills at the same time, but then again, a different, challenging and above all, original game will hold its own in the marketplace.

One company that has made it a policy to avoid the "me, too" route is Taito, the people who started it all with the original *Space Invaders*. This is no knockoff operation. Devotion to the craft has paid off well for Taito. Since *Qix* (a game well ahead of its time), Taito has released *Wild Western*, *Alpine Ski*, *Kram*, *Grand Champion*, *Space Dungeon*, the highly underrated *Electric Yo-Yo* and most recently, *Jungle King*, a jungle adventure (sounds a lot like a VCS cart that's topping the charts) that would even be a true test for Tarzan.

The plot of *Jungle King* reads like the storyline of an old Saturday matinee: Barbaric natives have taken the defenseless white woman prisoner. It's up to Jungle King to save her. Before rescuing this maiden, our hero must first swing across ten vines. Then it's into the drink for a quick swim. Armed with only a knife, he must kill (or avoid) hungry crocodiles. Once he dries off, our hero finds himself at the foot of a mountain. He must either jump over or duck under boulders that roll relentlessly toward him. Now for the climax. Face to face with Jane's abductors, Jungle King must leap over each of these masked fiends, avoid a bubbling cauldron and cut her loose.

Even though the action unfolds in a predetermined sequence, certain variables, such as vine speed and position, make each game unpredictable. The object here is not to map out a preset pattern, but to analyze and react to each situation as it presents itself.



The first jump

Crossing the jungle from vine to vine is done by simply moving the joystick east and depressing the jump button at the appropriate moment. The tough part is picking the best time for takeoff. Even though each vine swings at a steady rate, Jungle King's position on the vine alters the swing. Under optimum conditions, Jungle King can leap about one half the width of the screen. He can increase this if he is gripping the vine near its end. If he lands on the *upper* portion of the vine, the range of his next jump will be shortened.

Phase two of *Jungle King* puts our hero underwater. The object is to cross the river without running out of air or getting eaten by the crocodiles. The jump button serves as Jungle King's knife control. For beginners, I recommend concentrating on just crossing the river. Don't confront the crocs head-to-head. If you choose to take a few out, don't get too close when their

jaws are open. Knife or no knife, they've got you beat when they bare their teeth.

The other hazard to watch out for when submerged is the air bubbles. Pockets of them rise from the river's floor. If Jungle King runs into them, he will be overpowered and carried to the surface.

This in itself does not pose any immediate threat, but there is the possibility that a hungry croc will happen upon our hero while in this helpless state.

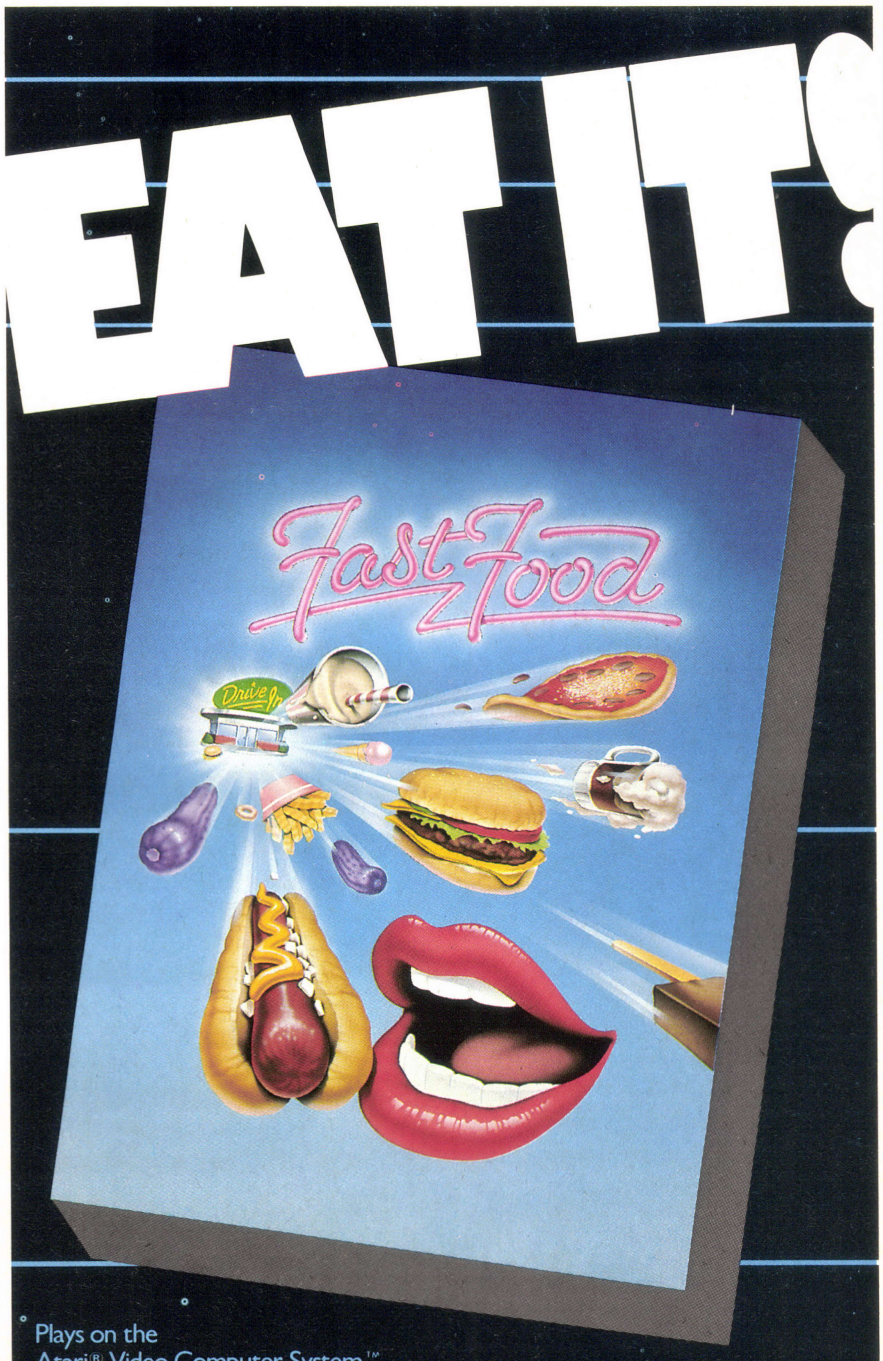
Split second decision making is the key to covering the third leg of Jungle King's journey: the mountain climb. As the adventurer begins his ascent, boulders will begin tumbling toward him. These rocks are jagged and uneven. Ditto for the face of the mountain. Instead of rolling smoothly across the screen, each stone realistically bounces as it tumbles.

As each stone approaches, survey the terrain between the boulder and Jungle King. If it is relatively even, jump over the boulder. If the ground looks broken up, the rock will probably become airborn. In this situation, Jungle King must duck. This is done by pulling the joystick south.

Jungle King now confronts the bad guys. To reach Jane, J.K. must hurdle each cannibal, one at a time. Like mindless lemmings, the nasty natives hop in unison and periodically poke their spears skyward. Just before reaching the west side of the screen, the natives change direction and begin to move east again.

The trick here is to watch the rope that is alternately falling and coiling up. Experience says that the third time it comes down is the best time to start jumping. When in flight, your only concern is the natives' spears. I don't think I have to tell you what happens if they decide to joust when Jungle King is directly overhead.□

Note: *Jungle King*, the current number one game in the nation's arcades, has had its name changed to *Jungle Hunt*. The family of Edgar Rice Burroughs (the man who wrote *Tarzan*) felt that the game "ran afoul of certain rights." Aside from the title and slight change in the character, *Jungle Hunt* is the same game as *Jungle King*.



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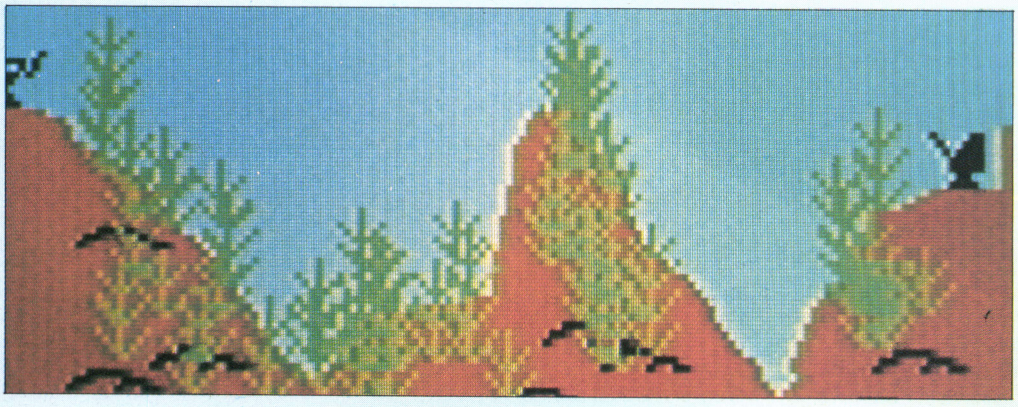
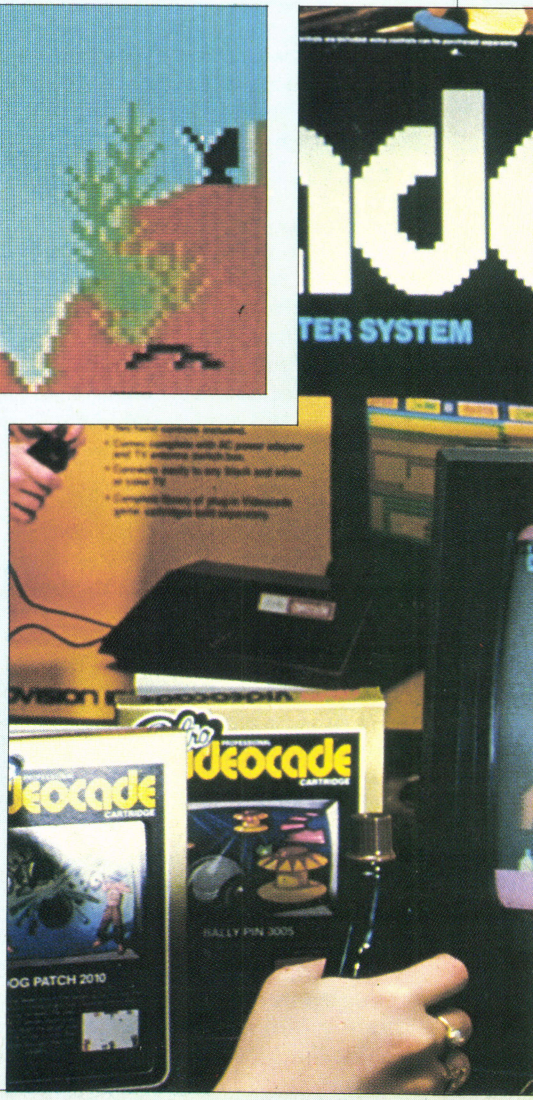
Game Workout

ASTRO CADE

By Michael Blanchet





While you spend countless hours blowing away mutants, another David-and-Goliath struggle is being waged by the game companies themselves. Even though the war has just begun, we already have our heroes (Atari) and an Unknown Soldier. One guess who that might be.

Here's a hint. It started as the Bally Home Computer. Then there was a change in command, and the system was renamed Astrovision. Six months later — Astrocade.

Feature for feature and dollar for dollar, Astrocade stacks up well against the current runner-up in the games race, Intellivision. The logical question is "What's the catch?" Well, there *is* none. The Astrocade system is quite good. Now that Astrocade has found a name that it can live with, let's go over the system with a fine-tooth comb.

The exterior is characterized by sleek lines and a low profile. The cartridge receptacle is on the "dashboard" of the console, next to a 24 button keypad. Game cartridges are inserted in the same manner as audio cassettes are loaded into a player. Since the cartridge is virtually locked in, players won't jar it loose in the heat of battle, a mishap that could cause distortion on the screen.

The on/off switch and the channel selector are located on the back left and right sides of the console, respectively. Running along the rear edge of the mainframe are two banks of controller jacks. A pair of hand controls is packaged with each Astrocade. One feature that I found thoughtful was the cartridge storage area built right into the console. By lifting the plexiglass cowl, there is space to stow 15 Astrocade carts. Maybe this is not a big deal to kids, but I'm sure Mom appreciates it.

I'm sure that I am not alone when I say that, for the most part, home game controllers stink. They are cumbersome and every brand has its own quirks. The Astrocade controllers are the only ones on the market that can actually claim to be truly "handheld." The unit is shaped like the butt of a pistol. For comfort, even during a marathon game session, these rank as the best going. The fire button is actually a trigger, which is easily and comfortably depressed by the index finger.

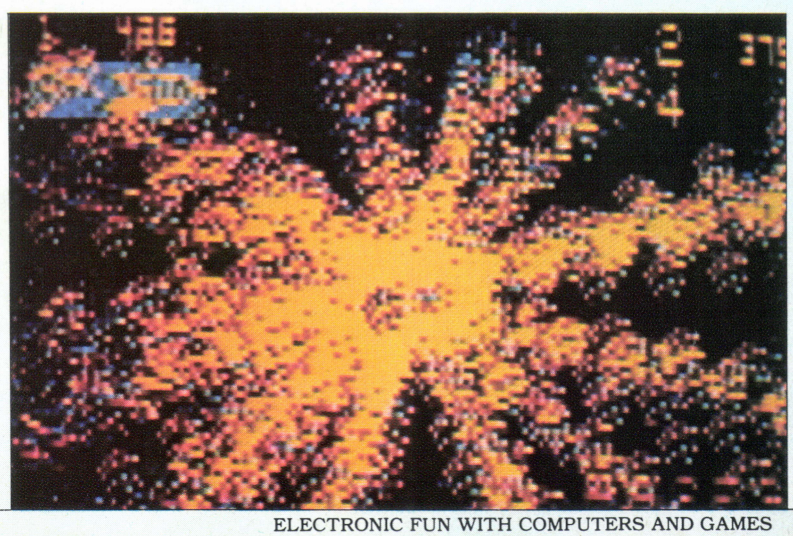
But the joystick, which rests atop of the controller, is hardly a joy. Oh, it works all right, but at best it's somewhat inaccurate. Movement in eight directions is possible, but using it to find the fine line between upper and lower right on the screen can be a frustrating experience.

These controllers also serve as remote game selectors. At the end of any game, a tug of the number one controller trigger will call the main game menu up on the screen. Once this is done, a second tug puts a number up on the display. Turn the knob until the figure corresponding with your selection appears. Pulling the trigger a third time locks in your choice. The same procedure is used to select game options, difficulty settings and the number of players.

By far the biggest expense to the home gamer is not the initial investment in the game system, but the cost of starting and updating a game library. At $30 a pop, even a meager cart collection represents an investment equal to or surpassing the price of the mainframe. A lot of bread for a little fun. The folks at Astrocade have obviously been informed of this predicament. So, to sweeten the pot, they have programmed four resident games into the Astrocade system, instead of giving away a free cart (which is usually a game no one would go out and buy separately anyway).

Two of these resident games aren't really games at all—one is a calculator function and the other is called *Scribbling*. The calculator function makes Astrocade the only home video game that can help you with your homework. Using the keypad, computations can be made using the five supplied functions (addition, subtraction, multiplication, division, and percentages).

Of the resident programs, *Scribbling* is by far the best. The TV screen is turned into an electronic canvas and, by manipulating the



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controls and the keypad, you are able to draw virtually anything. There are no winners or losers in *Scribbling*, no aliens, explosions, bonus points, or extra game lives. But like the calculator function, *Scribbling* is one diversion that actually has a practical application and is fun to boot.

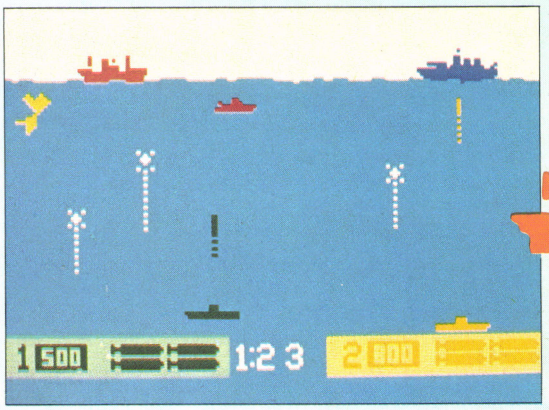
The cursor, or brush, is controlled by the joystick. The size of the cursor, which alters the width of the line to be drawn, is adjusted by turning the knob. Once the cursor has been placed in the desired position on the screen, a line can be drawn by moving the joystick and pressing the trigger simultaneously.

Initially, the color scheme appears rather simple, but it can be altered. By depressing the appropriate button on the keypad, color intensities can be heightened or dulled. A total of 256 colors is obtainable.

According to the instruction booklet, *Gunfight*, one of the remaining resident games, "is a very popular arcade game for two players." That may have been true back when the system was introduced, but at the present time that's debatable. Fashioned after *Boot Hill*, one of the earliest Midway coin-ops, *Gunfight* is just that—a gunfight between two players.

Using the joystick to select field position, the knob to adjust gun trajectory and the trigger to fire, the object of *Gunfight* is to shoot the other guy before he shoots you. To make the action a little more interesting, a series of obstacles, including cacti, trees and a covered wagon, occupy the strip running down the center of the screen. These cannot be penetrated by bullets. Since anything is possible on the video screen, Astrocade blessed these bullets with the ability to bounce. Now players must be mindful not only of head-on shots, but ricocheting slugs as well. Honestly, a game like this is only fun when you are playing against your little brother.

The final resident game, *Checkmate*, is an Astrocade rendition of Atari's *Surround*.

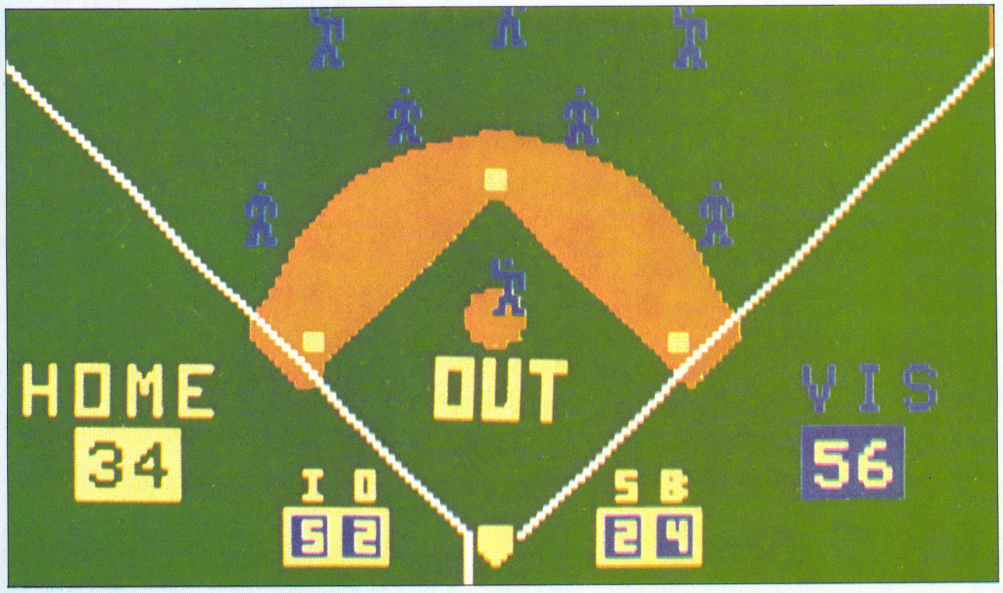


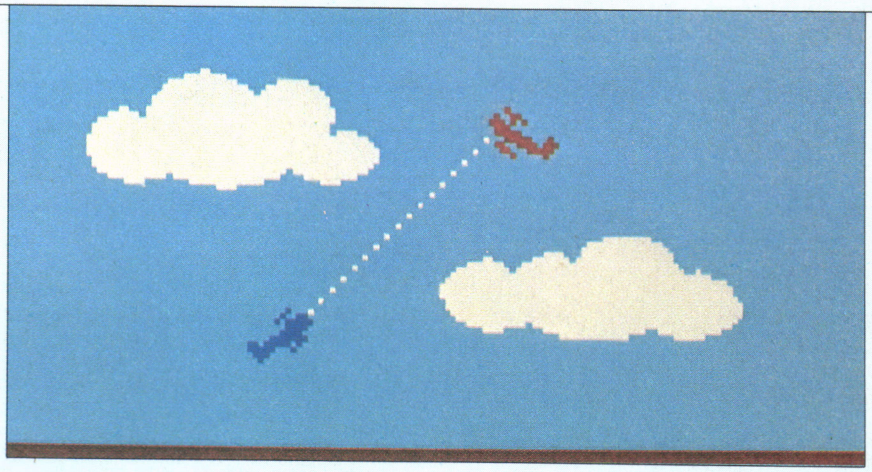
Wipe out enemy ships in SEAWOLF. Below, the realistic graphics of BASEBALL.

By piloting a symbol around the playfield, the object of the game is to cause the three other participants to collide with a portion of their own tails, your tail, or one of the playfield walls. Let me elaborate on the word tail as it applies here. Each player is assigned a certain symbol at the beginning of the game. As he moves around the playfield, a tail, or chain, comprised of this symbol, is left behind. You biology buffs may liken it to a tapeworm. Anyway, what you do is rope off as much turf as possible so that the remaining players have a limited space in which to move. When there is nowhere left to run, the lead symbol will crash into a tail or a wall, knocking him out of the competition. *Checkmate* is a simple game, but an absorbing one. No luck involved here, unless of course, one of your opponents screws up.

Eventually, you'll reach an impasse with *Checkmate* and the kick will be gone from *Gunfight*. It's time to spring for some new games.

At presstime, approx-



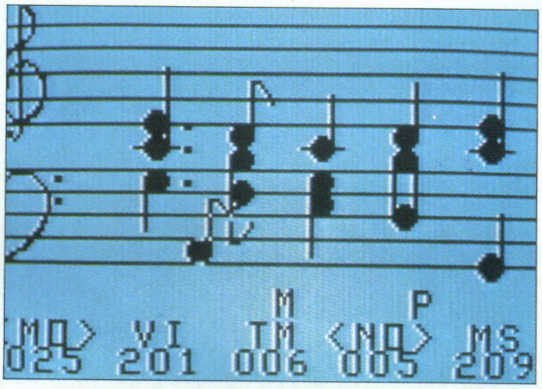


RED BARON—No Snoopy, but great dogfight.

imately two dozen cartridges were available for use with the Astrocade system. Even though the bulk of the current library is old hat, there are a few bright spots in it.

Since Astrocade was originally affiliated with Bally, the coin-op arm of the firm, Midway, was the original birthplace of many Astrocade cartridges—such as *Galactic Invasion* (which for all practical purposes is *Galaxians*), *Space Fortress* (dead ringer for *Space Zap*), and *Star Battle*. More recently, Astrocade introduced *The Incredible Wizard*, a clone of Midway's *Wizard of Wor*.

When Bally sold out to Astrovision, a lucrative means of turning arcade games into home cartridges was lost. What puzzles me are the generic titles given to the carts that are clearly home renditions of Midway properties. Gamers are a name-conscious lot, and the association with an established success is rule number one in this business.



MUSIC MAKER lets you write songs.

What I did find encouraging about Astrocade is that they realize a game system can be more than just a source of amusement—it can also serve as an educational tool, and more importantly, a true computer. Proposed cartridge releases clearly reflect this. *Creative Crayon* is a deluxe version of *Scribbling*, with a couple of neat tricks up its sleeve. The game can snapshot any one image or series of lines and "rubber stamp" it anywhere else on the screen. With the "life program," a kaleidoscope effect can be realistically generated. For an additional cost, a light pen can be purchased. With it, the Astrocade owner can write directly on the TV screen.

Another cart that breaks new ground is *Music Maker*, which does just what the name implies. Using the laws of harmony, pitch, decay, etc., computer Bachs can compose original tunes.

Touted as the first adventure game played in real time, Astrocade's *Conan* cartridge sends you back to the days of swords and sorcerers. According to its maker, Conan is a fast, kinetic game, as far as fantasy/role-playing carts go. The action unfolds quickly and is not dependent on or hampered by breaks to punch in complicated, esoteric codes—a necessity with games of this nature offered by other manufacturers. Hence, the game is staged in "real time."

For those of you who feel that the action in video games is a little too fast, Astrocade offers the sedate alternative—*Artillery Duel*. This is the kind of game that can be played with your feet up and your head back. Using formulas for projectile trajectory that are actually taught at West Point, your mission is to lock in on your opponent's gun implacement and hopefully flatten it before he does the same to yours.

And who said video games don't breed violent and aggressive behavior?

Each Astrocade game, including the older titles, is pleasing to the eye. For the sake of comparison, the graphics are about as good as those generated by Mattel's Intellivision, long regarded as some of the best in the industry. At times, the colors and effects are downright awesome. One example is the dramatic demise of the player's base in *Space Fortress*. When an enemy shell reaches the core of the ship, the resulting explosion, though overdone, is quite breathtaking. Multi-colored pillars of rubble fly out from the crumbling base to every corner of the screen. The first time I witnessed this, I honestly thought my television was going to explode. In *The Incredible Wizard*, players quick enough to beat the Wizard at his own game are rewarded with a most eerie barrage of shimmering lights. This sure looks and sounds a heck of a lot better than "puff" and "blink". Astrocade, though not a tremendous seller, is a very good system.

Actually, the biggest problem with the Astrocade is not the system and it's not the games either. The biggest problem is finding the system and games in the stores. If you have the same problem write to: *Astrocade; 6460 Busch Blvd., Suite 215; Columbus, Ohio 43229.*□

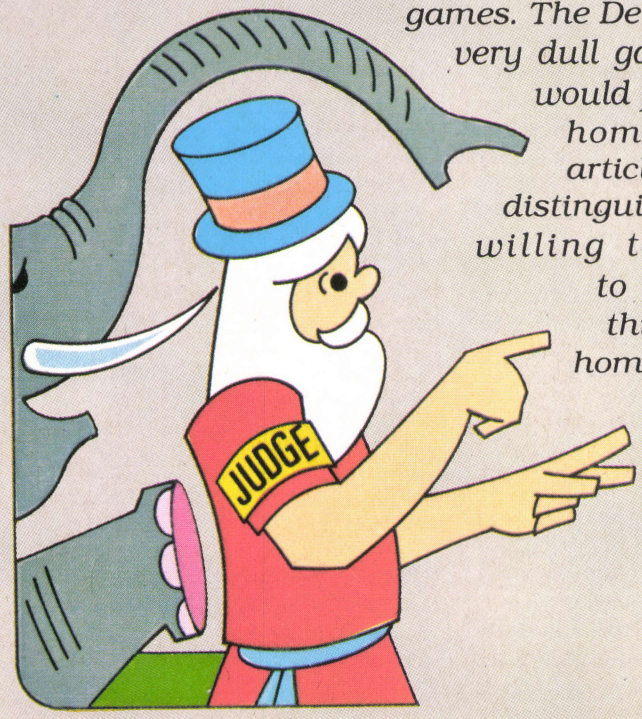
Video games you'll never see!

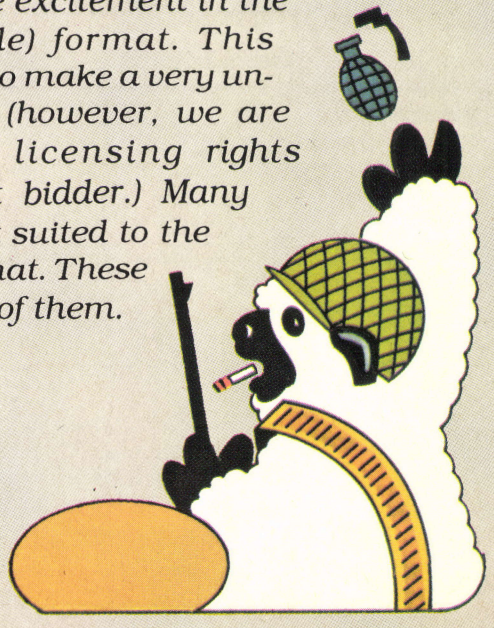
(We hope!)

By Randi Hacker

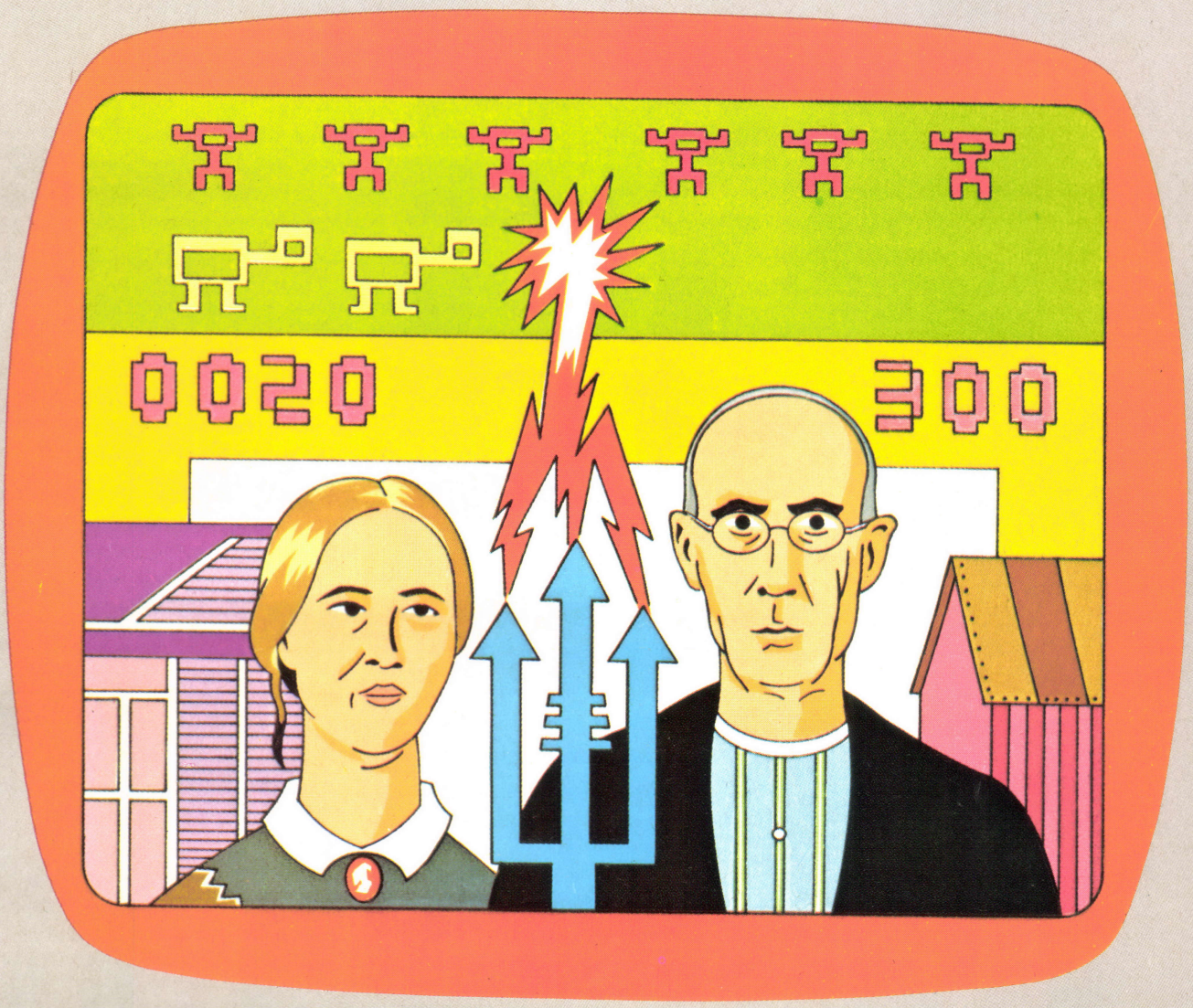
In the Beginning, there were arcade games. This was noisy but it was definitely good. In fact, this was more than good. This was profitable. Things went along really smoothly until someone came up with the bright idea of licensing the games and making home versions of them. This seemed like a good idea at the time but it soon got out of hand. First arcade games were licensed. Then movies were licensed. Pretty soon nothing was safe from the licensing menace. You could probably sell the home game license to your grandmother if she had good enough graphics.

But some things aren't meant to be turned into home video games. The Dewey Decimal System for one, would be a very dull game. The Table of Elements, for another, would provide little excitement in the home (or arcade) format. This article would also make a very undistinguished game (however, we are willing to sell the licensing rights to the highest bidder.) Many things are not suited to the home video format. These are a few of them.





Bill Silbert



AMERICAN GORFIC

American Farm Workers Union Games/Atari Compatible Cartridge

Summary

The first VCS game licensed from a famous painting. In this game of skill, daring and crop sharing, you are pitted against illegal aliens who threaten to take jobs away from American laborers. You must send these migrant workers back where they came from or suffer the horrible fate of paying them as much as $1.76 per day.

Weapons

You have at your disposal a photon laser pitchfork and "smart" fertilizer. You've got to shoot the aliens as they descend from their space pick-up truck to pick your crops. The aliens will defend themselves by boycotting lettuce and picketing your farm.

Scoring

You begin with one married couple. For every 1,000 migrant workers you deport, you are awarded another couple, 2,000 packages of Burpee seeds and a government contract *not* to grow soybeans. When you are wiped out, the Secretary of Agriculture appears and turns your farm into a nuclear waste dumping site.

Play

Use the joystick to manipulate your pitchfork. The red button fires smart fertilizer missiles. Your not-so-smart wife stands behind you and murmurs encouraging things like, "Look out!", "What do you want for supper?" and "My children never call me."

Don't try to outrun alien fire. Learn their native tongue and tell them there are jobs "down the road a-piece." If all else fails, turn your farm into a dude ranch.

NATIONAL PERSPIRER

Scamsheet Games/Atari Compatible Cartridge

Summary

The first game licensed from a newspaper. So, you want to be a reporter for a national tabloid? In this game you must write sensationalistic headlines without regard to accuracy or truth. You are the pilot of a space ship and must shoot out words to form scandalous headlines as they scroll by at the top of the screen. At the same time, you must shoot at or avoid lawsuits, libel charges and subpoenas that fly at you from all angles at incredible speeds and threaten to blow your enterprise sky high. If a lawsuit should hit you, you have to go to court and fight famous comediennes, who win, and then you're out a lot of money. If you win, you have to go live in Florida. Some may construe this as having lost.

Weapons

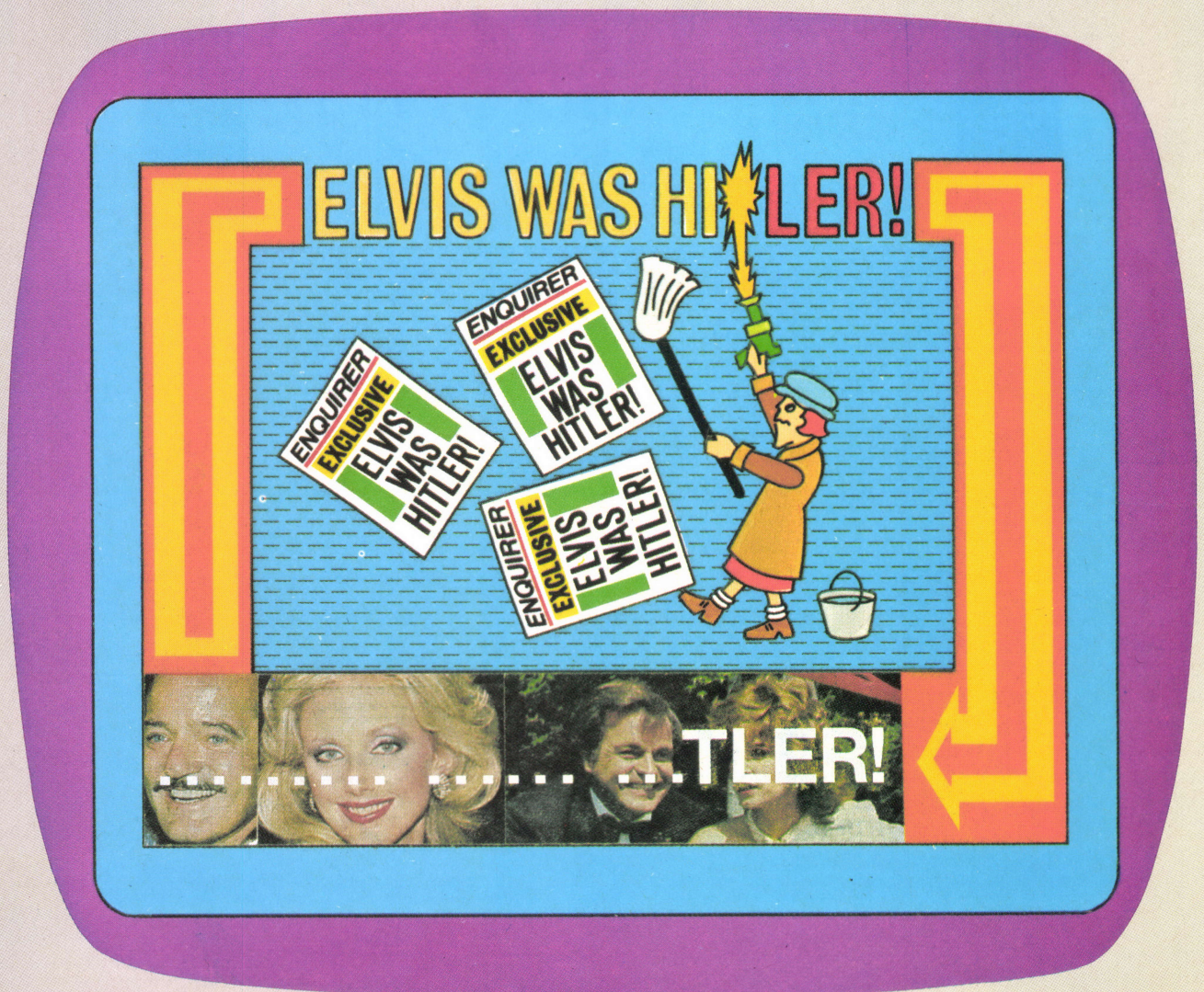
Your only weapons are a total disregard for the very ethics upon which society is founded and an airtight alibi.

Scoring

2,000 points are awarded for interviews completed without ever having spoken to the party. 10,000 points are awarded for in-depth interviews with the dead.

Play

Use the joystick to maneuver your spaceship and the red fire button to shoot out the letters you need. Use anyone you can to get ahead. Extra points awarded for headlines about Hitler, men giving birth, animals being tortured, child zombies and families kidnapped by UFOs. You automatically win if you publish the headline under your own name.



LAMB ATTACK

Mother Goose Games/Atari Compatible Cartridge

Summary

This is a breakthrough—nursery rhyme licensing. You are Mary. A lamb is following you home from school. Everywhere you go, the lamb is sure to follow and, frankly, you've had it. You must destroy these killer lambs to make the world safe for synthetic fabrics.

Weapons

You have a variety of sophisticated weapons at your disposal—rocks, blackboard erasers and thermonuclear missiles. You may use any and all of these to keep the lambs from following you. The lambs will fire back with surface-to-Mary heat-seeking missiles.

Scoring

Every direct hit turns the lambs' fleece from white as snow to dull grey. When the entire lamb turns black, it's dead. You receive a bonus Mary for every 10,000 lambs you waste. The game is over when sheep become an endangered species.

Points are awarded for the most delicious way of disposing of wasted lamb. Last month's winner was Mary Beth Hilliard, a 42-year-old mother of five who basted the lambs in lemon juice overnight and then covered them in Shake 'n' Bake and served them to her family. Julia Child judges all entries.

Play

Use your joystick to move Mary and the red fire button to shoot at lambs. The more lambs you kill, the more come after you. There is no hyperspace. There is no escape. Lambs are everywhere and you have to destroy them. Your teachers will require a note to explain your prolonged absence.

KRAMER VS. KRAMER

Child Custody Games/Mutually Incompatible

Summary

In this two-player game adapted from the hit movie, you are the Kramers fighting over the custody of your son. You must prove you are the best parent to assume the responsibility of raising a child by successfully blasting the other parent to smithereens.

Weapons

Both parents are equipped with laser insult guns which inflict psychological wounds with deadly accuracy. Anything you say can be held against you and, using special "slander" bombs, you can dredge up questionable incidents from your opponent's past. Your lawyer may object at any time, but he hasn't got a gun so you don't have to pay any attention to him.

Scoring

Every direct insult earns you credibility points in the eyes of the judge. For every 10,000 points, you receive visitation rights for one more weekend. The game ends when your son is old enough to live on his own.

Meeting, picking up and dating a good looking attorney or other court official doesn't get you any points but it does mean you've scored.

Play

Using the black and white/color switch, you can flip between courtroom scenes and a shopping center where you each get a shopping cart and compete against time and each other as you try to collect presents that will make your son love you best. In this version, no one wins except the kid.

Use the red button to fire. Use the joystick to manipulate the weapons. Use one parent to manipulate the other. Use six-figure numbers to manipulate the judge.

NOAH'S COSMIC ARK

Old Testament Games/Atari Compatible Tablets

Summary

You are Noah. You've just gotten some good news and some bad news from the Man Upstairs. The bad news is it's going to rain. A lot. The good news is that you're going to survive. But you've got to build an ark and choose two of every species on the planet before you win. In an era without power tools, this is going to be some tough job.

Scenario

The ark is being built on your front lawn. You've got to build it while all your neighbors stand around and party and call you an old worry wart. You don't understand why you've got to do this when the only thing your friends are doing is buying umbrellas.

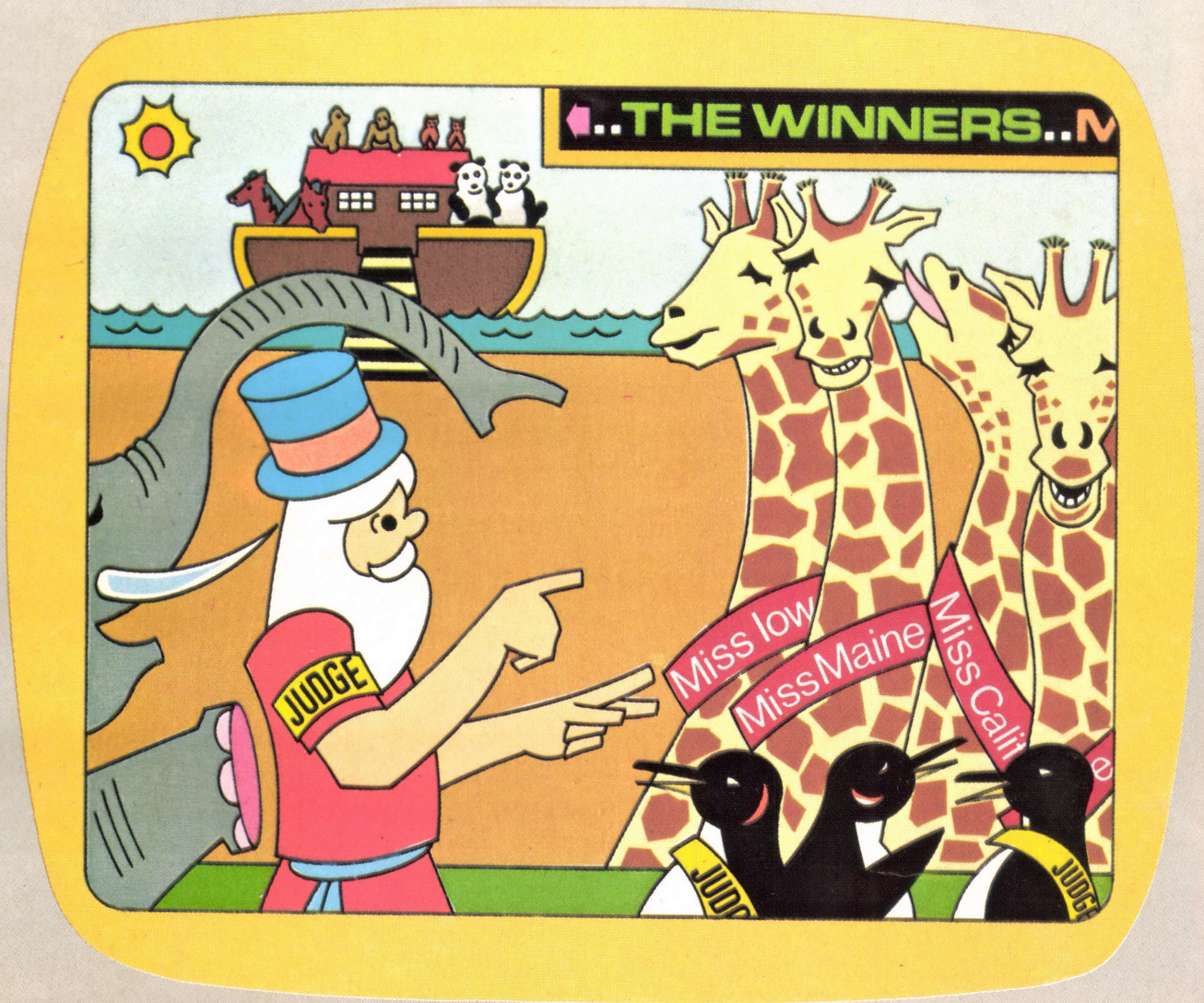
Scoring

You get 1,000 points and a rain slicker if you complete the ark before the downpour begins. You get five points for each fish, 10 points for each mammal, and so on up the evolutionary ladder. Animals with fur must be corralled into a separate compartment because Mrs. Noah is highly allergic to them.

Play

Use your joystick to manipulate the wood to build the ark. Use an outboard motor to power the boat. Use a lifejacket to keep from drowning.

Remember, you're playing against time so hurry. You've got only forty days and forty nights to collect two of every species of animal before you automatically lose to the computer. Game is available in the original Hebrew as well as the King James version. □



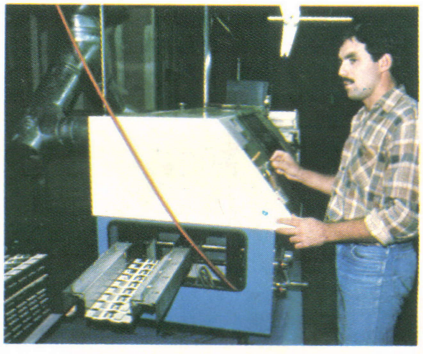
Trouble in a video game company

Three new games you may never see!

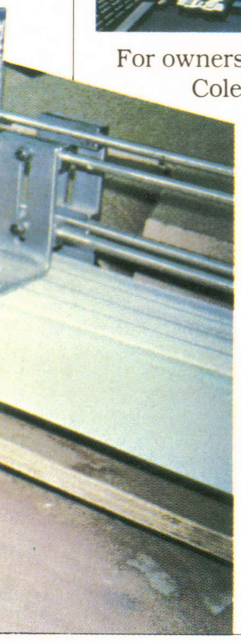
By Dan Gutman

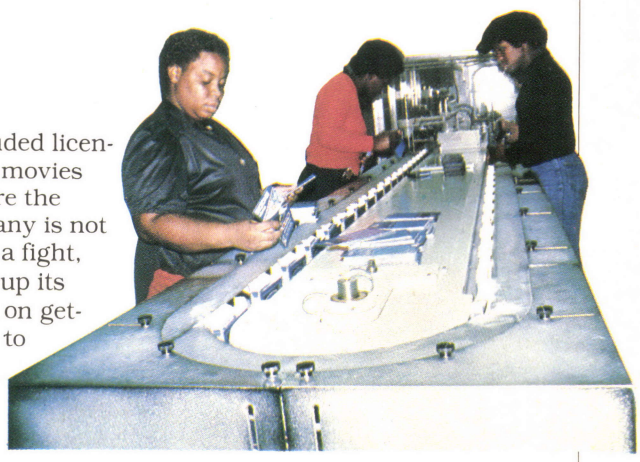
When you land at the Dallas/Fort Worth Airport, you almost expect the baggage carousel to run amok and fling your suitcases all over Texas. Fortunately, *Lost Luggage* isn't reality, it's just a video game from Games by Apollo, who also gave us *Shark Attack, Space Cavern, Space Chase, Skeet Shoot, Racquetball* and *Infiltrate.*

Texans like to do things in a big way and Apollo had big plans for 1983. Had they not declared Chapter XI (a form of bankruptcy) recently, you'd have seen *Wabbit, Final Approach, Pompeii, Kyphus, Squoosh* and *Guardian* in the stores by the time you read this. Also for the VCS, Apollo plans a game that talks, claims president Pat Roper, and it won't require any kind of expansion module or enhancement device. That could still cause some interesting activity over at Mattel and Odyssey.



For owners of Intellivision and ColecoVision, Apollo had created four games for each of those systems along with two for the Texas Instruments TI-99/4A. In addition, Apollo had planned to translate *Space Cavern, Cosmic War, Commander Warp II* and *Antic* for the Atari 5200 and 400/800 computers. As of this writing, they were awaiting a decision from the court on whether or not these games will, in fact, reach you.





Apollo's plans also included licensing various arcade titles, movies and television shows before the trouble struck. The company is not going to go down without a fight, however. Apollo is rolling up its sleeves and going to work on getting sufficient new capital to allow it to release all the new game designs it has created already, so far from Silicon Valley.

Located just a few farm-lengths away from Southfork Ranch (where TV's *Dallas is shot),* Apollo quickly outgrew its clothes. One year old on the day of our visit, the company had expanded from one to three sprawling buildings, and there were more to come. "We're gonna *own* this town one day," Apollo president Pat Roper drawls in that great Texas accent. "A company *should* own the town it's in." You have to believe him.

At first it doesn't seem that Texas and video games would mix. Texans are big strong men who ride horses and never cry. Video games are kid stuff. But when you think about it, video games are blasting aliens out of the sky and defending civilization from evil forces. Video gamers don't cry. When you die in a video game, you shrug it off with a shake of the reset button. Video games and Texas go together like meat and potatoes. In the 1980s, instead of roping cattle and having gunfights, Texans are gunning down cybertronic-actuated quasi-spheroids.

Pat Roper is a tall-gangly man with bushy hair. He looks like he'd be more comfortable in blue jeans, but wears a jacket and tie because he works in a plush office all day. A little over a year ago, Pat Roper was the president of Apollo, the film-strip company. You know—those "So You Want To Be A Geologist" strips they made us sit through in second grade. Then one day—and he remembers the date, October 6, 1980—Pat had an inspiration. "I had just finished a game of *NFL Football* on my Intellivision," Pat recalls, "and I was thinking that I'd paid $35 for the game. And then I thought, hey, what is there to prevent Apollo from making video games?"

Nothing. Activision had already formed, but hadn't released their first game yet. The same was true for Imagic and U.S. Games. Roper decided to give it a shot and jump into the newborn business.

When Nolan Bushnell started Atari, he was already a skilled computer programmer who had tinkered with Ralph Baer's pioneer video game, *Spacewar.* Pat Roper didn't know *anything* about video games, and it's a long way from filmstrips to microcomputer chips.

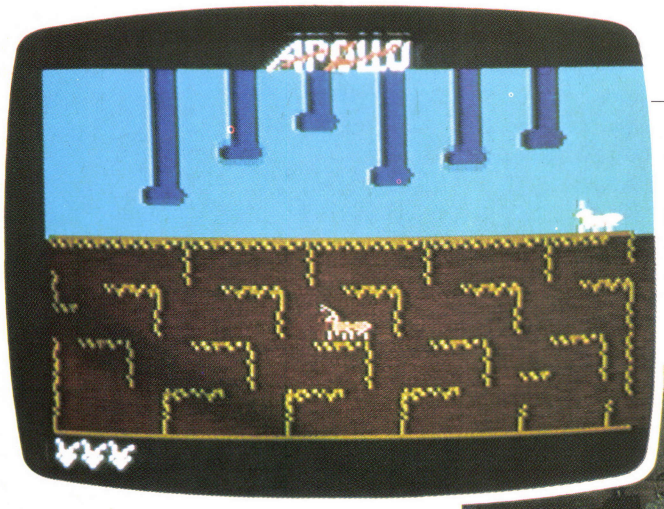
Pat Roper is no Silicon City slicker. He could have tried to lure a high-priced designer away from Atari or Mattel. That would have been easy enough. But the thought didn't even *occur* to him. Instead, Roper did what any down-home country boy would do if he needed an extra hand around the ranch . . . he put an ad in the paper.

If you read the *Dallas Morning News* or the *San Francisco Chronicle* on the morning of October 17, 1981, you would have seen it...

VIDEOGAMES PROGRAMMER

We need you to join us in our exciting venture. If you have experience and know-how in this area please call Bill at 690-8366. All replies strictly confidential.

SPACE CAVERN is Apollo's biggest-selling VCS game. Now it's also coming out for the Atari 5200 and 400/800 computer. The screen at left is an unfinished version. The assembly line at Apollo can produce thousands of cartridges a day. Machinery prints and cuts labels, put the cartridges together and folds boxes.



Pat Roper (below), founder of Apollo. At left, ANTIC, to be released next month. It was named after a chip in the 800 computer.

Ed Salvo is a Pillsbury Dough Boy with a joystick. He's short and pudgy and reminds you of that kid in school who giggled and threw paper airplanes at the substitute teachers when they weren't looking. Ed saw that ad in the paper. He had been working on a video game at home and sent it off to this little-known filmstrip company in Richardson, Texas.

Skeet Shoot was not the greatest game in the world. The graphics and game play were very simple, even for two years ago. But two years ago, there were so few games on the market, people were *crying* for new ones. Pat Roper decided that *Skeet Shoot* was a good enough effort for the first time out of the box, and bought the game from Ed Salvo. Despite a slight programming bug (since corrected), *Skeet Shoot* hit the street on Pearl Harbor Day, 1981, and was an instant success. Roper immediately hired Salvo as a full-time designer and got him working on his next game, *Space Chase*. *Space Chase* was the first "scrolling" game for the Atari VCS. Salvo finished it in just nine weeks and Apollo had another hit. If Pat Roper manages to turn things around Apollo can soon be a multi-million dollar company.

Pat Roper shows you Apollo's 1983 games like a father showing off his newborn baby. "This is *Squoosh*," he says, demonstrating a game in which you work for the "Apollo Grape Company" and must stomp grapes without getting stomped yourself. "We thought about calling it *Vats Incredible* or *The Grape Escape*, but decided on *Squoosh* instead."

A conversation followed on naming games. Pat feels the game itself is much more important than the name, but he still bats around a number of names before settling on one. "*Space Attack* became *Space Chase*, and *Labyrinth* became *Pompeii*," he says. "What do you think of when I say *Commander Act II*?"

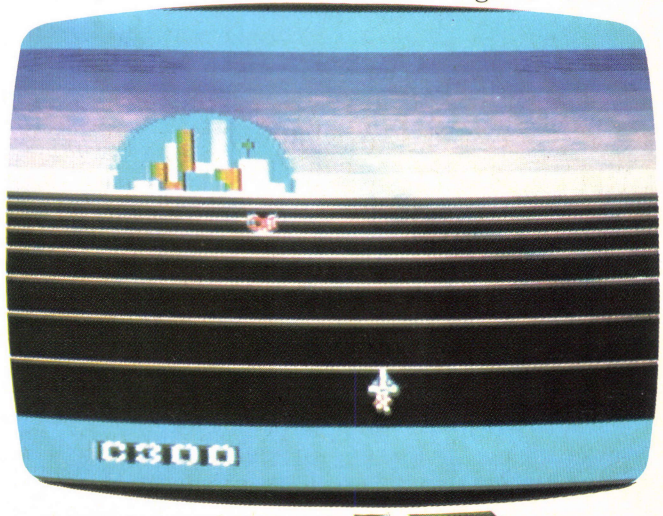
"Nothing," I say.

"How about *Commander Warp II*?"

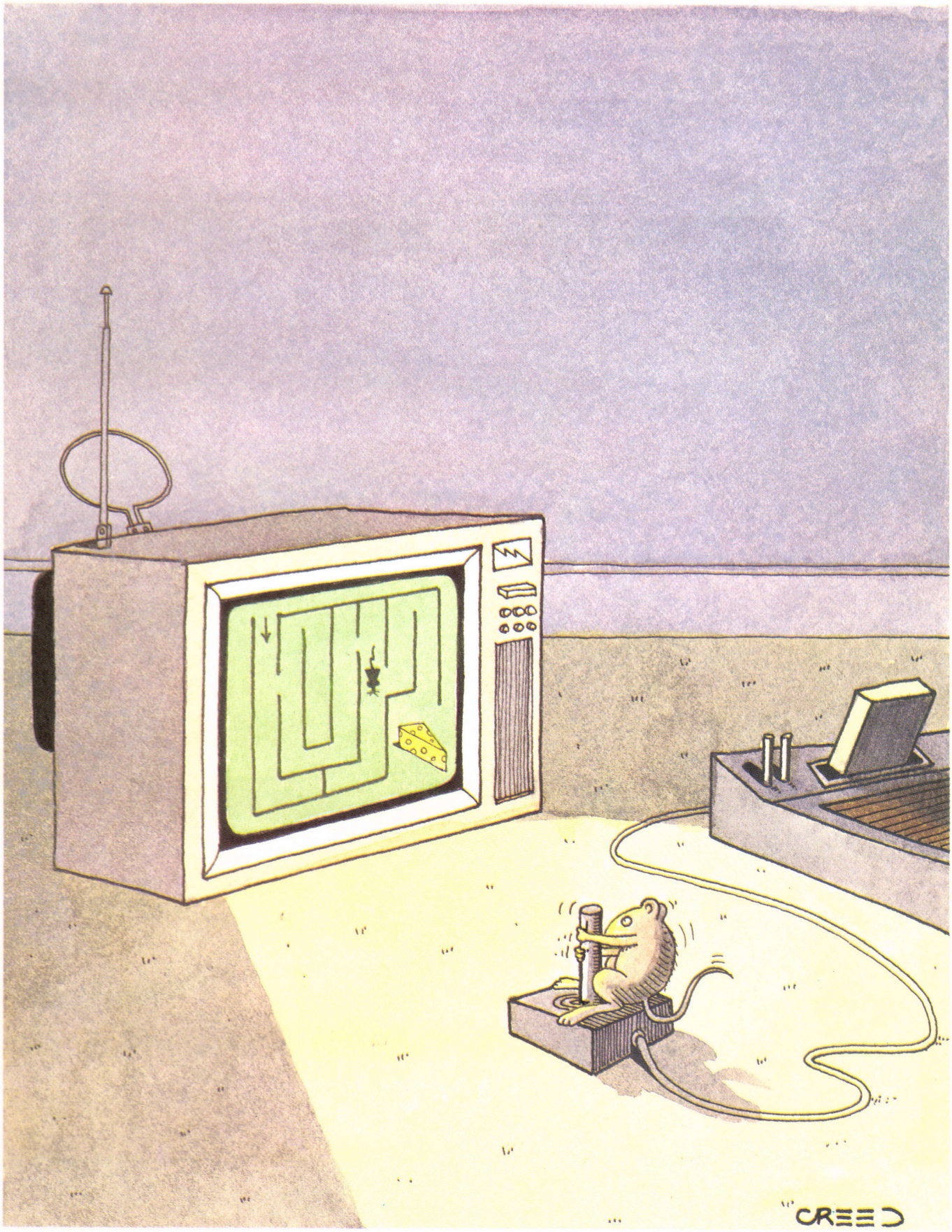
"A space game."

Pat Roper smiles. *Commander Warp II* is coming soon, he hopes. Another new Apollo game, *Kyphus*, ended up with that name simply because it sounded mysterious. Later, they found that "kyphos" meant "curvature of the spine." "We originally thought *Kyphus* was a distortion of reality," explains Ed Salvo, "but we looked it up and it's a distortion of the backbone." Hanging on the designers' room wall at Apollo is a little sign that reads: "*Kyphus* is more than a game—it's a disease." There's one advertisement you won't be seeing in *Newsweek*.

When you get down to it, it's not the name of the game—it's the game itself that counts. Texans are used to gunfights and shootouts and now they're in one of the biggest battles in history—the video game wars. You've got your big guns—Atari and Mattel—and you've got a lot of young upstarts just itching to do some damage. It should be interesting to see when and if these Texas boys can join the gunfight.□



Ed Salvo became Apollo's first designer by answering an ad. Now he heads a team of 30 designers. COSMIC WAR (above) will be available in January.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PITFALL!
Game of the Month
Activision's jungle adventure game combines superb color graphics and excellent game play.

Little ET... Home at last

ET ★★★

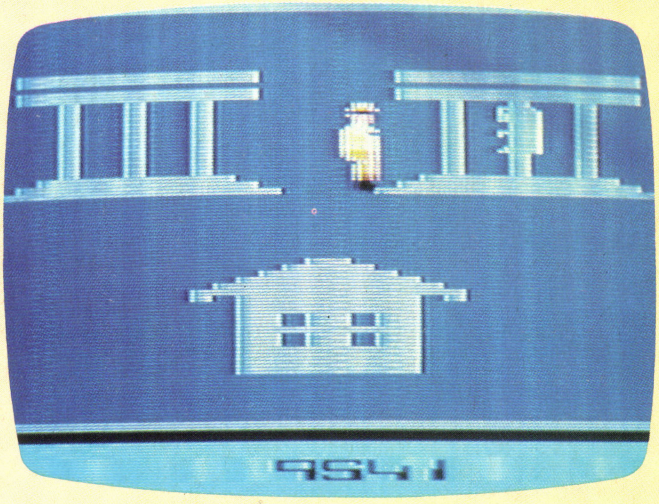
Atari/Atari VCS

By Frank Lovece

As the otherworldly ET told his earth-friend Elliott at the climax of the movie *ET*, "I'll always be here." That's for sure. Before boarding that lightship for home, ET evidently sat down with his agent and signed a few deals for ET T-shirts, postcards, bumper stickers and, of course, a video game. Alien he may be; stupid, no.

Like Atari's video game adaptation of director Steven Spielberg's previous movie, *Raiders of the Lost Ark*, *ET* is an adventure game with multiple playfields. Yet *ET* seems designed for players younger than those of most adventure games—and this immediately gives it a childlike charm. The instruction book has ET himself talking about "that nice little alien—Elllleeott" and "those tasty energy pills . . . Reeessseess Peeesssess."

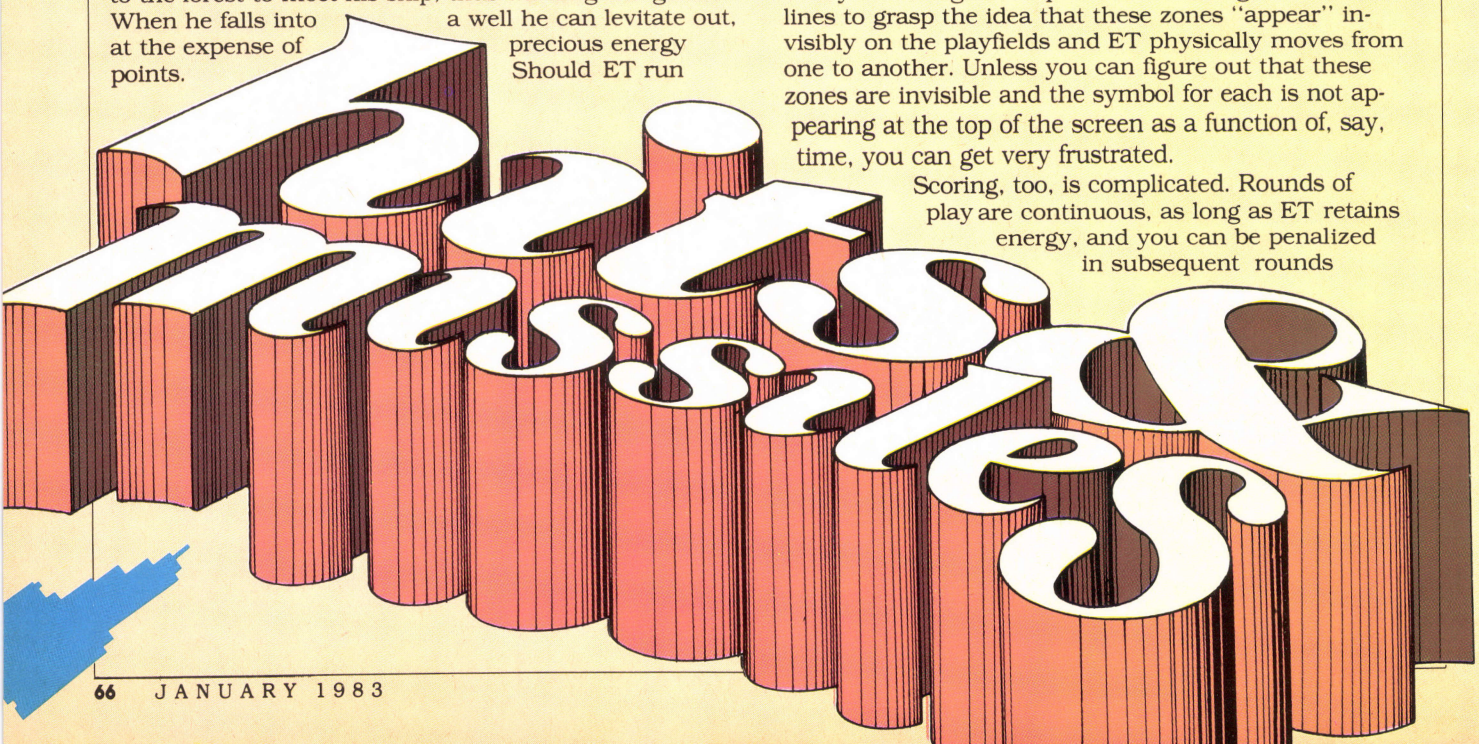
In this one-player game, you're represented on-screen not by Elliott, but by ET. You have to guide the little guy from a forest through ravine-pocked fields to hunt for energy-giving candy and the three pieces of his "transgalactic communicator" (which looks a lot like a telephone), and then take him back to the forest to meet his ship, thus winning the game. When he falls into a well he can levitate out, at the expense of precious energy points. Should ET run out of energy before his ship arrives, he gets three to four "mergings" with Elliott for temporary rejuvenation before going into hibernation. In game variation three,



the characters are ET and Elliott only; in game two, there's also an FBI agent who must be avoided; and in game three, a scientist joins the show. There's even a wilted flower ET must revive.

Given this chummy charm, what's hard to understand is why the directions are so hard to understand. The game play itself is easy enough to grasp, but the instruction book is not. There are, for example, six ill-named "zones" during which ET can perform one function (other than moving) apiece, such as eating candy or calling his ship. It takes reading between the lines to grasp the idea that these zones "appear" invisibly on the playfields and ET physically moves from one to another. Unless you can figure out that these zones are invisible and the symbol for each is not appearing at the top of the screen as a function of, say, time, you can get very frustrated.

Scoring, too, is complicated. Rounds of play are continuous, as long as ET retains energy, and you can be penalized in subsequent rounds



for collecting more than 31 pieces of candy in any one round, *and* things score 490 or 770 points at a time, *and* points can be taken away as well as added, *and* there are bonus points at the end of each round, *and* the whole affair is very cumbersome.

Worse, though, is an idiosyncrasy in the program which makes it difficult to levitate ET from a well without immediately having him fall back in—over, and over sometimes. This is maddening. Given the attention span of humans in general—forget about the *very* short attention span of most kids—it's worse than maddening: It's incomprehensible. Atari addresses this problem in its instruction book, yet the company's suggestion of turning left or right immediately after the screen changes from the well to the ground doesn't seem to work a lot of the time.

However, graphically, Atari has rarely done anything better. The "credits" screen that appears before the game actually begins features a mosaic-like portrait of ET that, given the limitations of the VCS, is stunning. I wish that there were some way to animate it.

Young players won't be let down by this adaptation. as often happens when a character is translated from one medium to another. And though the holidays are over, this game is still one way of wishing for Reese's Pieces on earth and good will toward humankind.

DEADLY DUCK ♪♪♪♪

Fox Games/Atari VCS

By Sherry Jacobs

In childhood there was Donald; in the bathtub it was Rubber; on your table it's Peking and now, on your television screen, it's Deadly. *Deadly Duck.*

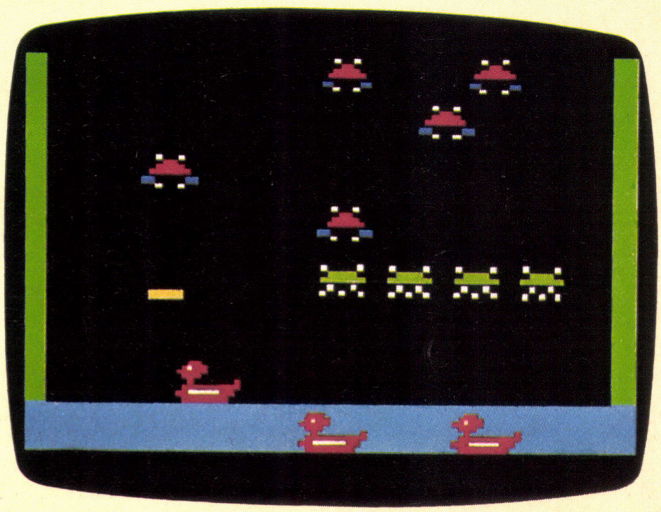
The object of this new game from 20th Century Fox Video Games is to move deftly back and forth across a pond while avoiding bricks dropped by crabs. Allies to the crustacean enemy are dragonflies who, unlike the crabs, are indestructible. They carry bombs. Deadly doesn't simply bite the bullet and avoid destruction, he spits bullets. From his bill. And he aims them rather deftly by turning his head upward towards the enemy. Brave duck, he.

This single-player game has four levels of difficulty. Each successive level brings two more dangerous dragonflies. If you hit a dragonfly you get extra points, but a direct hit also causes a rain of bombs from the green insects.

You start with four ducks. At first the game is a piece of cake but, by level four, you find yourself white-knuckling it. And if a brick hits you, it's goodbye Deadly, hello Pressed.

The graphics are brilliant—colorful and extremely realistic. The crabs look good enough to eat, with their claws moving in and out, in and out. And the incessant vibration of the dragonflies' wings, accompanied by their droning humming sound, makes you feel as if you ought to be swatting.

All in all, the game is challenging, intriguing and maintains interest. It's difficult, but not so difficult that you get discouraged. So it's every duck for himself. Take your corners and come out spitting.



When you're on the run, you can increase speed by ceasing fire after you've made a direct hit. Stop, fire, and then take off.

JAWBREAKER ♪♪♪

Tigervision/Atari VCS

By Raymond Dimetrosky

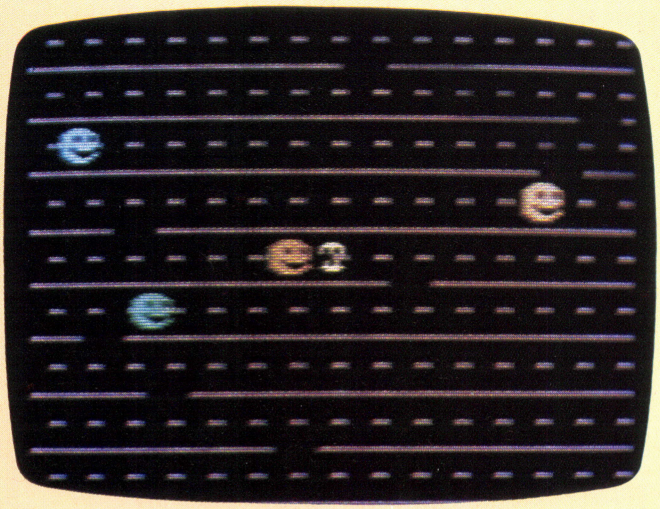
With everything from movies to comic books being turned into games for the Atari VCS, it was inevitable that computer games would follow. After all, if a game is popular with computer owners, why shouldn't it be popular with owners of the VCS?

In *Jawbreaker*, you control a munching set of teeth. Your goal is to devour as many candy bars (dashes) as possible without being chewed up by one of the smiling faces. However, if you eat a vitamin pill, you gain special powers and then you can eat the smiling faces! Sound familiar?

Yes, no question about it, this game is similar to *Pac-Man*, but it's not a ripoff. The scene is made up of a number of horizontal rows filled with dashes. There is no complex maze to travel through. However, there are openings in the walls which allow you to take short cuts from row to row. The walls and their openings move back and forth at varying speeds, constantly changing their positions. Therefore, you have to try

to anticipate when an opening will be in front of you. This feature helps turn *Jawbreaker* from a mediocre game into a very interesting one.

Just as in the VCS version of *Pac-Man*, at times it becomes difficult to move the joystick precisely. However, the designers cleverly solved the problem by



utilizing the joystick's red button. By pressing this button your teeth "freeze," allowing you to stop them before they have traveled too far.

Another improvement on *Pac-Man* is the game's colorful graphics. Each smiling face is a different color. These creatures have personality. They are not lifeless blobs. However, maybe due to the limits of the VCS, you are again forced to dine on boring dashes. This game would be much more fun if you were devouring something more interesting, like hot dogs and hamburgers . . . something to really sink your teeth into. The sound effects are not thrilling, but adequate. When your teeth eat a row of dashes, it sounds more like a machine gun than chewing. But those who enjoy the VCS version of *Pac-Man* will probably also love *Jawbreaker*. And there's no question about it, this game does have personality. When you clear the entire set of dashes, a toothbrush comes across the screen and brushes you! This game is a dentist's dream.

When you are moving vertically and are ready to enter a row, use the red button to freeze your teeth in front of the row's entrance. Then push the joystick right or left and you will easily enter the row.

INFILTRATE ♪♪♪

Apollo/Atari VCS

By Ed Hulse

Infiltrate bears a conceptual resemblance to the popular *Donkey Kong*, so fans of the latter should find the Apollo game quite stimulating; advanced gamers will master it quickly and move on to a more difficult game.

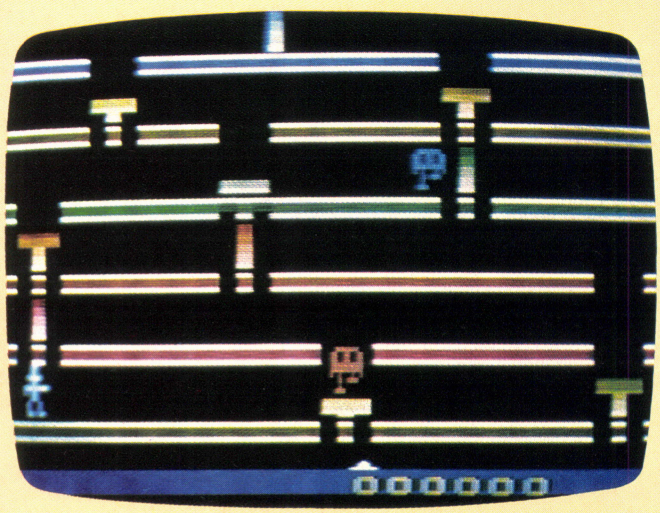
This game has a "secret agent" motif: The player must guide the movements of a spy whose mission consists of penetrating an enemy fortress, seizing vitally important documents, and—of course—eliminating as many enemy agents as possible.

Apollo has, I think, exercised masterful restraint in avoiding any identification of the enemy by name or nationality; players, presumably, are to assign their own designations to the villains (which, depending on your age and disposition, might be homeroom teachers as easily as Commie mutants).

There are six levels to the playfield, with caches of documents at the very top. The player can move vertically from level to level by means of conveniently placed elevators; horizontal movement is controlled by the joystick. The red button activates what the directions call "a high-powered laser gun."

A real-life secret agent would no doubt be concerned with obtaining the documents and avoiding any contact with the enemy—but heck, that wouldn't make a very exciting game, would it? Half the fun is blasting baddies from the field, which not only affords enriching personal satisfaction but adds 250 points (with an extra 75 for catching them on the elevators) to your score.

By the way, Apollo has added considerable subliminal motivation for staying alive: When the enemy agents—who look suspiciously like creatures from *Galaxian*—are blasted, they dissolve in a conventional little burst. No big deal. Ah, but when the *player* is hit, the resulting explosion illuminates the screen like footage from the White Sands A-bomb tests.



Infiltrate has varying degrees of difficulty: three modes in which elevator speed and enemy mobility gradually increase, and another three with the added threat of invisible enemies.

Infiltrate is fun for a time, but it doesn't take long to master, which means that more intrepid thrill-seekers will probably be searching for new playfields to conquer before long.

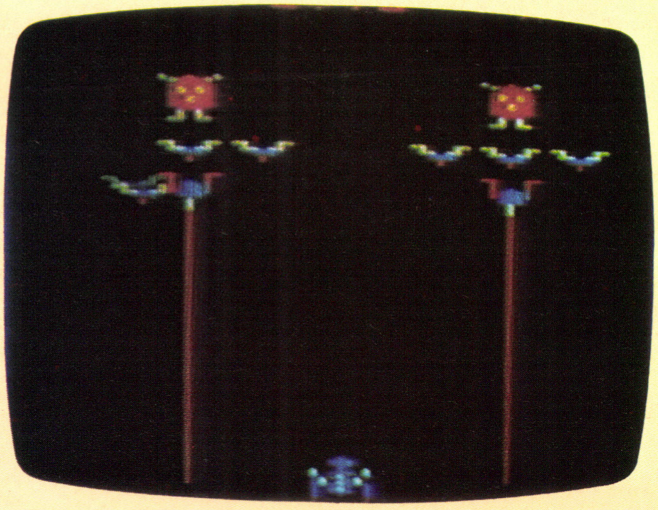
Whenever possible, use the side elevators, as they lift you two levels at once (the center ones only lift you one).

GORF

CBS Games/Atari VCS

By Kim Mills

Just like its arcade predecessor, the CBS Games version of *Gorf* is "frog" spelled backwards and, just like its arcade predecessor, this has nothing whatever to



do with the game. Also just like its arcade predecessor, the home version is four, four, four games in one. Its premise—like most outer space games—is that Earth is being attacked by aliens and your job is to save the planet.

The first is a shameless rip-off of *Space Invaders*, which *Gorf*'s designers called Astro Battles. But you won't be fooled by this watered-down imitation. Even if you play a medicore game of *S.I.*, Astro Battle won't blow you out of the sky.

Mission 2, called Laser Attack, consists of a laser ship protected by flying Gorfs. As the laser ship tries to obliterate you, kamikaze ships swoop at you from the corners of the screen.

Mission 3, is annoyingly weird. As usual, you are being attacked, this time by ships that emerge one at a time from a "space web" in the upper center of the screen. The attacking ship flies in a spiral pattern, shooting at you as it zooms in and out of an invisible shield. When in it, the ship, too, is invisible.

The last variation, called Flag Ship, looks simple but is frustrating in the extreme. A Gorfian flag ship patrols back and forth across the top of the screen, dropping heat-seeking tracking missiles over your ship. All you have to do to destroy the flag ship is score a direct hit to its "internal power reactor vent"—which looks like the spot on a bug where the head meets the body. The internal power reactor vent is about a quarter of an inch wide and not all that tough to hit. For some mystifying reason, it takes about half a dozen of what look like on-the-money strikes before the flag ship explodes.

If *Gorf* doesn't sound great; it isn't—but it packs one surprise: The game can only be played by one person. This piece of information is not mentioned in the instruction booklet (unless you count the place where it says, "Plug a Joystick Controller *firmly* into LEFT Controller jack of your video system").

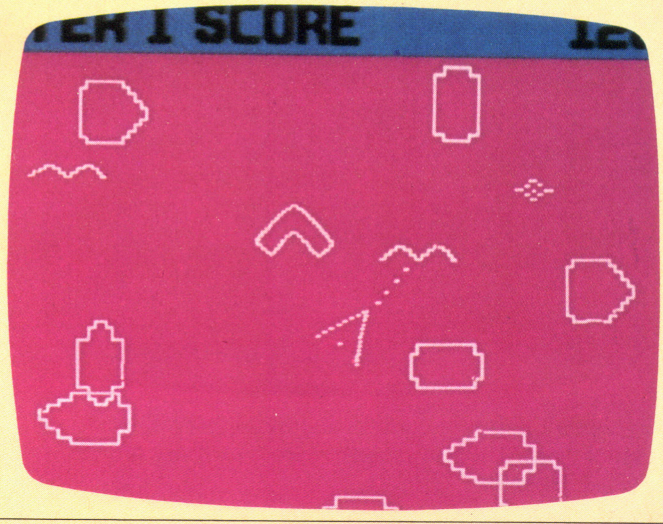
SUICIDE MISSION

Starpath/Atari VCS

By Frank Lovece

The name of a game can be its claim to fame. Starpath (formerly Arcadia) knew this from the beginning. One of its very first games was tagged *Communist Mutants from Space*, already one of the all-time great video game monikers. Now that same company has a game called *Suicide Mission*, and if the name isn't as colorful, it *is* accurate—play it long enough and you could bore yourself to death.

It's one of the more blatant versions of the classic *Asteroids*, which isn't so bad in itself. *Asteroids* is a great game, after all. *Suicide Mission* isn't the first game to be inspired by it. The new Starpath offering is, however, an *Asteroids* clone with even simpler graphics than the sketchy outlines found in the original, and virtually no change at all in the game play.



There are virtually no significant distinctions in *Suicide Mission*. Here, as in *Asteroids*, you're represented on-screen by a torpedo-spewing ship. Here, as in *Asteroids*, large forms float through the void, forms which break up after one hit, break up further after two hits and finally disappear after a third, well-placed volley. Here, as in *Asteroids*, a small, torpedo-firing attacker appears to home in on your ship.

Differences: Rather than being able to enter hyperspace, you can instead self-destruct and take all your enemies with you, scoring big points. (In fact, I found you can score more than 12,000 points—a sizeable chunk of the 20,000 needed for a bonus ship on the easiest and hardest levels—just by killing yourself. Ho-hum.) You also have the choice, using the A/B difficulty switch on the VCS, of having your craft fire rapid or single shots.

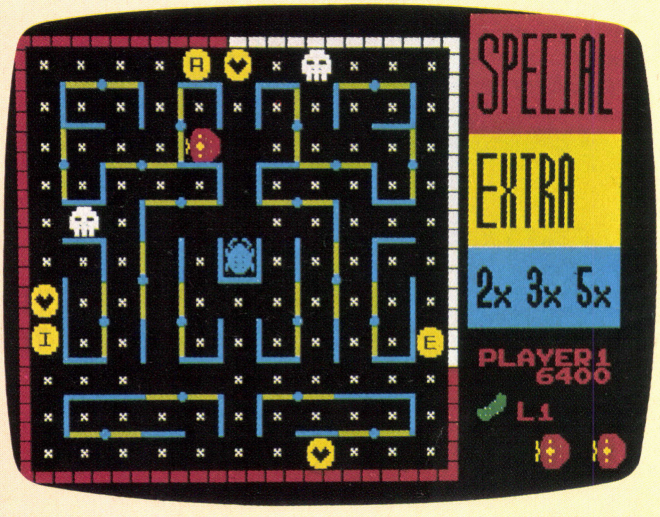
The instruction book carries on some silliness about your controlling a miniature submarine in a human bloodstream and firing "penicillin torpedoes" at virus colonies. There's nothing on the screen particularly relevant to this unappetizing scenario, and you might be better off, if you want to play doctor, by going with Imagic's Intellivision-compatible *Microsurgeon*.

LADY BUG ★★★★

Coleco/Colecovision

By Marjorie Crane

The dictionary defines ladybug as "a small, brightly colored beetle which feeds on other small insects." This definition was obviously premature in light of Coleco's new *Lady Bug* game for the ColecoVision. Webster's should make way for the 1982 *video* definition, to wit:



"A small, brightly colored digital bug which feeds chiefly on dots, hearts, letters and a variety of vegetables."

The play begins with a short tune which sounds like something played by the Yankee Stadium organist. You are then thrown into action with a screen that, in many respects, resembles the *Pac-Man* screen. Your task is to eat your way through a maze of dots, hearts and letters while avoiding deadly skulls and ravenous insects. Grab the vegetable and you get 1000 points.

Each screen consists of walls and doors which open and close according to the direction you steer your ladybug. Each maze contains approximately 100 dots, three hearts and three letters. With the latter you must spell the words SPECIAL and EXTRA. If you succeed in spelling these words in a specific color (yellow or red, for example), a jaunty tune is played and you get another lady bug. Spelling SPECIAL in red letters rewards you with a Vegetable Harvest Bonus Screen, consisting only of vegetables which you can eat to your heart's content while racking up thousands of points.

Coleco has successfully combined great graphics and adorable music in this near-perfect adaptation of the arcade game. The color is rich and brilliant right down to the details of the vegetables. As for the music, I am anxiously awaiting the release of the album. The excitement is constant and the fun never-ending. I have spent many of my waking hours in the pursuit of happiness with my vegetable-eating lady bug. I now leave you with a little expression my mother used repeatedly at the dinner table when I was growing up: "Eat your vegetables. There are ladybugs starving in China." I guess she must have known something then.

Hide in the corner right outside the center of the maze and wait patiently. Eventually the insects come out of the center, giving you a few free seconds to make off with the vegetables.

SPACE SPARTANS ★★★

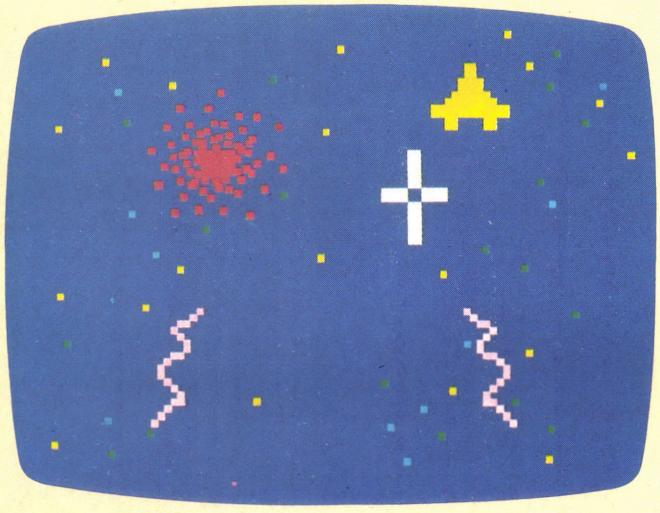
Mattel/Intellivision with Intellivoice

By Marc Berman

The fall of Greece gave rise to the Roman Empire. It also inspired Mattel to come up with *Space Spartans*, a talking game that says just about everything except "Beware of Spartans bearing lasers."

The object of this one-player game is to score points by blowing up the alien ships before they disable your spacecraft. One by one, the alien fire weakens and destroys your shields, tracking computer, battle computer, impulse and hyperdrives, impairing your ability to maneuver and aim. At the same time, your energy is being drained and you must return to one of your starbases now and then to refuel and make necessary repairs.

Male, female and robot voices report the status of the ship's systems, energy level, progress of the repairs, number of aliens and location of attack.



At the end of the game, the alien commander even puts in his two drachmas' worth.

Using the keypad, you can switch back and forth between two views: One is a sector grid where you can locate the alien fleets and starbases, and the other is a battle view of the universe through your own laser sight. The graphics are good but not terribly imaginative. But then there's not that many interesting things you can insert into a vast expanse of space. Mattel may also have had to sacrifice its usual brilliant graphics for more complex game play.

There are five levels of difficulty. If you like conversation, play the slowest version. It gives you plenty of time to get status reports. Harder Levels take more dexterity, but they also require some quick thinking, to wit: "Should I hyperdrive to another sector, return to starbase, attempt repairs in space, try to fight it out with damaged shields, or forget the whole thing and get a sandwich?"

The only problem here is that refueling and repairs at the starbase take time, and the player is forced to sit there while unseen Spartan mechanics perform oil changes and 20,000-light-year check-ups. Also, the robot doesn't know when to keep quiet. As if you didn't have enough to worry about when things go bad, this electronic nag keeps repeating, "Starbase One, under attack." It's enough to make you want to stuff a sock in his synthesizer.

What distinguishes *Space Spartans* from other space games is the multiplicity of functions and that great gang of voices. It's a complex game, but once you get the hang of it, it's as easy as falling off a Trojan horse.

SKY JINKS

Activision/Atari VCS

By Ed Hulse

When I was young, my favorite coin-op was the outsized standby that enabled the player to sit in a "driver's seat" and drive a race car around an obstacle-laden track. Activision's *Sky Jinks* is a video game equivalent—except that you control an airplane rather than a racing car.

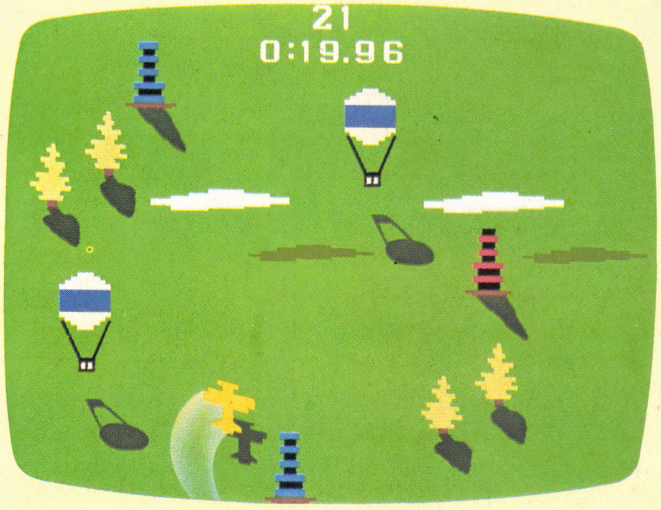
The object is to race your aircraft through a course in the shortest possible time without hitting pylons, trees, or balloonists. You have a choice of five different courses: "Polo Grounds," "Aero Acres," "Love Field," "Speedway Meadows" and "Thompson Tourney." While all fields have the same obstacles, they're distinguished by different scoring patterns. For instance, Polo Grounds, being the easiest, has a 25 pylon course. Thompson Tourney has a 99 pylon course. The joystick, moved to the left or right, banks your plane accordingly. The red button is used for the throttle; depressing it accelerates the P-41, releasing it reduces speed.

An added challenge dictates that you fly to the right of the red pylons and to the left of the blue, with a three-second penalty each time you pass one on the wrong side. Scoring, which is monitored at the top of the screen, indicates the number of *missed* pylons for the race.

Sky Jinks is geared for beginning video gamers, not old pros. The never-ending array of pylons, balloons, and trees becomes rather monotonous after a while, and only the youngest or least experienced player will find it challenging. Hand/eye coordination will really get a workout at first, but it doesn't take long to master the courses.

I might have enjoyed *Sky Jinks* as a youngster, especially if, as an arcade coin-op, it had a cockpit mock-up comparable to the old racing car favorite. But as a home game for hard-core fans, *Sky Jinks* offers little in the way of real excitement once you've gotten used to the pattern. It *is* a good first cartridge to introduce a young child to video games.

Start by going very slowly through the courses so you can determine the placements of the obstacles. After you've been playing for awhile, gradually speed up; you'll develop an intuitive feeling for the pylon locations.



METEOR RUN ♪♪

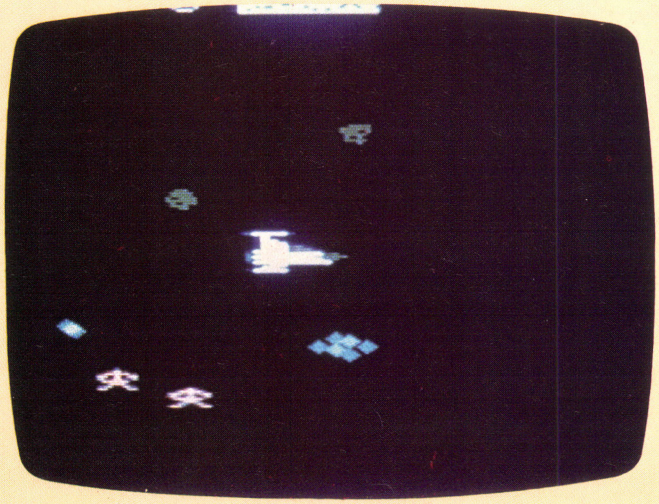
United Microware/Commodore VIC-20

By Walter Salm

You're in a brightly painted white and red spaceship somewhere in outer space but you're plagued by swarms of meteor showers and weird-looking alien saucers that fire homing torpedoes at you. Get hit by a torpedo or collide with a meteor or an alien, and you're dead meat. You have two spares, but this is a tricky game, and you'll need good reflexes.

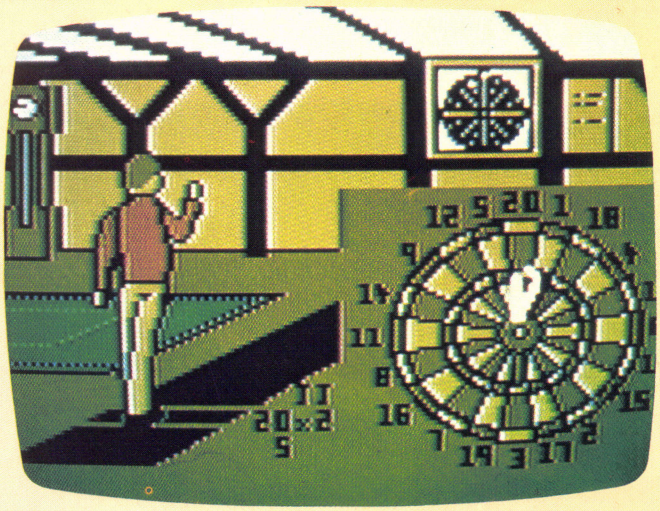
You can move up/down and right/left in the star field of the TV screen. The meteors and saucers come at you from the right and you fire forward. If you prefer, a touch of the "F7" function key reverses the direction of the entire pattern. A radar screen helps by pinpointing approaching aliens, and they make an eerie warbling noise to announce their presence. As with many VIC games, you can play using either keyboard buttons or a joystick.

When you eliminate an alien force, you move to another play level that's increasingly difficult. Don't get greedy for points by going after all those meteors until you've had lots of practice with this game. The meteors may look easy, but you have to zap them right smack in the middle to destroy them. The aliens are lots easier to destroy, but be careful—their torpedoes can get you very easily.



The graphics are excellent and the game has very realistic-looking space ships. But there are no real variations and there's no buildup of excitement. It's just a nice, leisurely and enjoyable space shoot-em-up.

When you call up your reserve ship, it appears in the center of the screen. Make sure you won't collide with a meteor or alien when you materialize.



DARTS ♪♪♪

Thorn EMI/Atari 400/800

By Norman Schreiber

Imagine this commercial. . .

"Pushing a Federation jeep through the galaxy is hard work! Dodging meteors, zapping aliens and bringing the cargo home are all part of the job. At day's end, it's time to reward yourself with a trip to the local pub. It's mellow time—time to slosh through gallons of ale and enjoy good conversation and a game of. . ."

Darts, by Thorn EMI, is something you play when you want to recover from space games. It's not one of those wonderful paranoid adrenalin-drenching, heart-thumping games. It's relaxing. It's also absorbing and intriguing. It's like—well—it's like a game of darts.

Perhaps darts translates into a computer game so well because it is such an idler's pastime. The game's graphic display helps the illusion. The screen shows a young man (posterior view) standing in a British pub (complete with genuine fake tudor beams). The man, his hand poised to throw, faces a dart board. A graphic inset shows the dart board and a hand. Move the joystick and the hand moves in a similar direction. Pressing the fire button releases the dart.

The game has been played over and over in my household. When two or more people have a go at it, we prefer to leave the computer out of the game. This makes it easier for a human to win. Going one on one with the computer doesn't have to be demoralizing. Just set the computer's skill level at six or above. It's kind of fun to see the computer's hand tremble.

SUBMARINE COMMANDER ♪♪♪♪

Thorn EMI/Atari 400/800

By Walter Salm

You're the commander of a World War II submarine on patrol in the Mediterranean and there are enemy convoys at all points of the compass. Your job is to sink as much enemy shipping as possible while keeping your sub intact. This is no fast-paced shoot-em-up. You're *really* in a sub with all of its problems and limitations—batteries that need recharging, an air

supply that needs to be replenished by surfacing, and the sub's very slow speed when you're submerged.

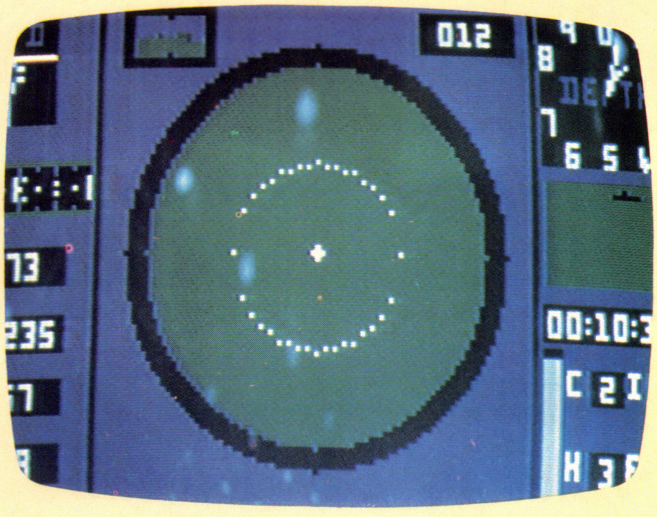
There are three different screen displays—all flanked by a cluster of instruments and gauges that tell you depth, remaining air supply, torpedoes and condition of various parts of the sub. The three displays show a map that pinpoints your own location and where the enemy convoys are, sonar and hydrophone displays, and a periscope view which works only when you're at 45 feet of depth or less.

You're surrounded by danger. If the destroyers' depth charges don't damage you, it's possible to scrape or get stuck on the bottom, damaging your propellers and engines; you can run out of air or battery charge; or your hull can crack from diving too deep.

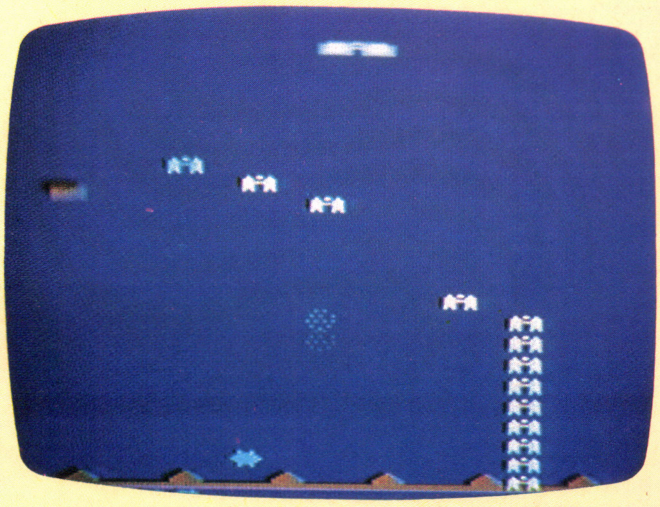
The joystick controls diving and surfacing as well as compass heading. The button fires torpedoes, but you can't shoot more than two at any one time, since it takes time to reload the torpedo tubes. Also, you can't fire unless your depth is just right (about 35 feet or higher). The sub responds to controls with agonizing slowness.

Yet the rewards are enormous. Whenever you hit an enemy ship, you want to jump up and cheer. There are plenty of misses, too, and when you're within torpedo range, you're usually getting smeared by a barrage of depth charges.

This is a long game—it can easily take a half-hour or more to either sink all the enemy ships or get yourself sunk. Time is eaten up by repairs and recharging the batteries on the surface. You have to watch your sonar bottom display very carefully—along with a dozen or so other displays and gauges. The realism level of this



game is incredible, and there are no magic escape hatches. The graphics are super, and the game has a lot of staying (and frustration) power. Playing strategy? There isn't one; just have patience while those repairs are being made.



MOONBASE IO ★★★★

Program Design/Atari 400/800

By Walter Salm

This isn't an either/or game—it uses *both* a minifloppy diskette and a cassette tape. The disk holds the game play, graphics, special effects, etc. The cassette gives you a very good sound track with voices from Earth controllers, mechanical robot speech, and even a thank-you message from the President, by deep-space radio, of course. The tape also controls parts of the game play.

You are the pilot of a heavily-armed Jupiter probe that has to defend Earth's bases on Io, Europa and Ganymede—three of Jupiter's moons—from hordes of alien attackers. First you have to get through a mine field that the aliens have spread around the moons and dock with the orbiting Earth base at Io. Then, after refueling, you fight off wave after wave of enemy attackers in one of the most exciting and fast-paced space shoot-outs I've seen in video games anywhere.

If you survive all that, you fly to Europa for a repeat performance: mine field, docking, waves of attackers. Then on to Ganymede for more of the same. Once through these six exercises, you have to go after the alien mother ship, which is a job and a half.

This game is not only innovative and loaded with tension—it'll take an awful lot of practice to get through the entire scenario with your laser cannons intact. The graphics are excellent, the sound track adds an extra touch of realism, and you'll have to fight off your friends to get control of your joystick back.

But I *do* wish it had a repeat practice track on the tape to help sharpen space shooting skills. You have to rewind the tape and start over each time you lose your ship. You do get an extra ship for each wave of attackers you get through, but it could really use a neophyte practice level.

Don't try to blast all the mines. Blast the ones in your path so you can get to the satellite station safely. On the moon, don't try to be a hero.

Making Your first MILLION

Strike it rich in software

Do you want to be fabulously wealthy? If you answered "no" to this question, perhaps you ought to seek professional help. If you answered "yes," however, the next logical question is "How? There's got to be a better way than the state lottery." There is. Computer games. If you've ever played a game and thought, "I can do better than that with one RAM tied behind my back," do it. There's a good chance your game can bring you big bucks. Maybe not a million dollars right off the bat, but something in the high five-figure range. That's not a bad starting salary. How do you begin? Well, with a blockbuster idea, a little chutzpah and a self-addressed, stamped envelope. Read on. . .

By David Tuller

• Last year Greg Christensen, a California high school student, designed a game on his Atari 800 computer called *Caverns of Mars*. To win, a player must negotiate the twists and turns of six levels of underground tunnels, activate a bomb at the lowest depths, and make his escape before it explodes. Christensen sent the program to Atari, who snapped it up immediately. During the game's first six months on the market, 20,000 other people followed Atari's lead, netting the author over $50,000.

• Mark Turmell's love affair with computer programming began when he first got an Apple computer at the age of 15. Three years later he created *Sneakers*, a shoot-'em-up space war game that rapidly became one of the top sellers in the Sirius program line. After purchasing his second effort, *Beer Run*—in which a man scaling a building is bombarded with bottles hurled by a batch of boozers—the software supplier knew they had a good thing and offered the 19-year-old computerphile a job programming games for them. He makes more money than most doctors.

• When he's hard at work on software for Sierra On-Line, John Harris lives rent-free in one of the four houses the firm maintains just for freelance programmers. Two years ago, Harris met Sierra president Ken Williams at a computer trade show and showed him *Jawbreaker*, a maze game Harris had concocted. Williams liked it, bought it and encouraged him to write more. Today, thanks to royalties from *Jawbreaker* and other Harris games, the 21-year-old pulls in a six-figure income.

Selling Your Games

Computer game players are a fickle bunch. Constantly on the lookout for ever-more-exciting thrills and chills, they gobble up new games with an appetite that would give even Pac-Man a run for his quarter. And with the current boom in personal computer sales, the firms scrambling for a hefty byte of the program pie are churning out software as fast as they can. Though only a few will hit as lucrative a jackpot as Christensen and Turmell and Harris, computer aficionados with talent, imagination and perseverance stand a decent chance of winning big. You can be one of them.

Program companies report a rapidly growing surge of submissions from hobbyists. Sirius, Sierra On-Line and Microsoft, for example, now receive an average of ten to twenty programs a week. The first two buy perhaps one or two games a month. That may not sound like much, but according to Sirius product manager Ernie Brock, freelance submissions account for up to 50 percent of the firm's new product.

Contest & Money

Sierra On-Line actively encourages dealers to prompt local computer whizzes to send in programs. If the company ends up purchasing the game, the retailer receives a $500 finder's fee. Spectravision, in addition to screening actual programs, sponsors a bi-annual contest with a cash prize

Michael Garland

for whomever comes up with the best game idea. The firm will then develop the software itself.

Last year Atari launched the Atari Program Exchange (APX), which probably offers would-be authors the best opportunity to publish their work. APX, designed as a means of distributing user-written programs for the Atari line, publishes a quarterly catalog available to both dealers and consumers; prices for the software range from $15 to $30. In addition, if the firm feels a particular program has outstanding market potential, it will add it to its main product line. That's what happened with *Caverns of Mars*.

Each quarter, APX awards prizes to the designers of the most innovative programs in four areas: consumer (including games), educational, business and professional, and system software. First, second and third place winners in the consumer category receive $3,000, $2,000 and $1,000 worth of Atari merchandise respectively; the cash values of prizes in the remaining divisions are $2,000, $1500 and $750. Each year, the company also picks a grand prize winner, eligible for $25,000 in Atari products.

BEER RUN, by 20-year old Mark Turmell

The make of a programmer's machine is relatively unimportant. Software firms generally carry product that is compatible with a wide variety of computers; if they like what they receive, they can modify it fairly easily to fit other systems. The only requirement is that a computer be sophisticated enough to produce a game that can sustain a player's interest over a long period of time.

Which Language?

Program language, however, is another matter. Although APX accepts games written in BASIC, other firms maintain that the high-level languages are simply too slow. "We don't have many games in BASIC," points out Larry Beyn, software acquisitions manager at Sierra On-Line. "Customers demand games with a lot of speed, so for us to buy something, it pretty much has to be in assembly language," —that is, a series of ones and zeroes in the binary system.

How much can freelance programmers make? That depends, of course, on sales, and then on the kind of deal they work out with the firm. Some companies pay a flat rate, generally in the area of $5,000 to $10,000. However, royalty arrangements are more common, and in the long run can bring in a lot more money. Average royalties can range anywhere from 10 to 25 percent. With most games retailing for between $25 and $35, and sales of 10,000 and up over the course of a couple of years not uncommon, authors of outstanding software can sometimes rake in more than $100,000 from a single program.

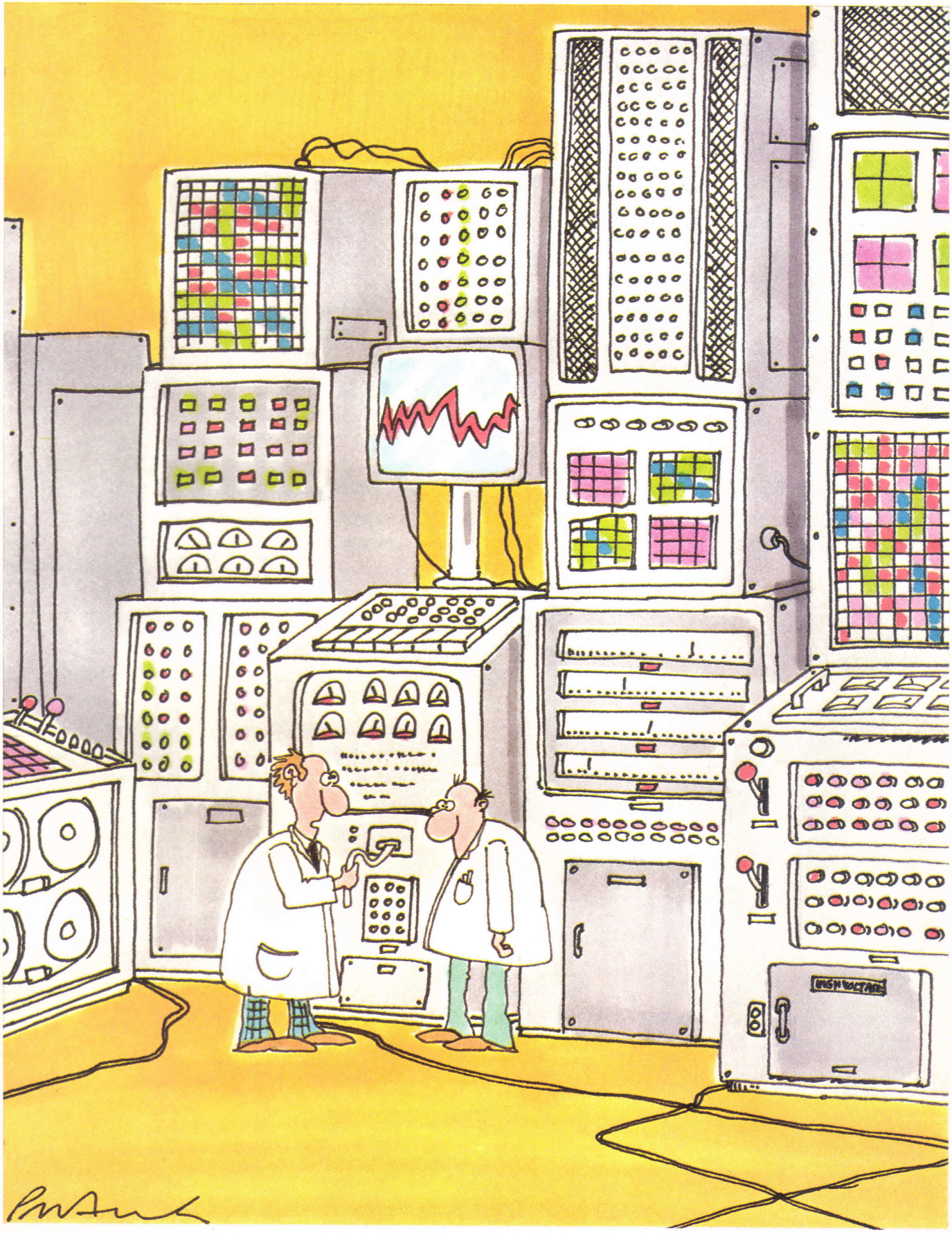
Some firms, like Atari and Microsoft, are willing to look at software in other categories besides games. However, "it has to be in an area in which a person has a specialty, like investment strategies or resource management," says Allan Boyd, who screens submissions for Microsoft. "People send us a lot of data bases, word processors and spread sheets. But we have a large number of in-house programmers who work on that kind of generic program, and there's no way a hobbyist out there can compete with what we do. Indeed, every day it's getting more and more difficult to come up with a unique product."

Difficult? Yes. Impossible? Far from it. The key is to know what a firm is seeking, and then to come up with something to fill that need. Games remain the easiest area to crack, and the following tips should help you along:

- *First and foremost, an original concept is absolutely essential.* Sure, *Space Invaders*, *Zaxxon* and *Pac-Man* are great. But software companies don't want clones of games already available, and they reject a lot of programs for just that reason. Indeed, most of them will zap any space war games and return them to you quicker than you can say "hyperspace."
- *Once you've fleshed out the idea idea a bit on paper, develop a simple prototype and show it to friends.* That way you can tell right away whether your creation is a dud or not. Unless your buddies have unusual tastes, if the game inspires them, chances are it will also inspire countless numbers of strangers to lay out hard-earned bucks to buy it.

In fact, letting others play it as you go along can be an invaluable means of eliciting much-needed advice. Because a game can take months to finish, it's very easy to get so caught up in it that you lose

Continued on page 97



IT SAYS," PLEASE DEPOSIT 25¢ FOR ADDITIONAL PLAY."

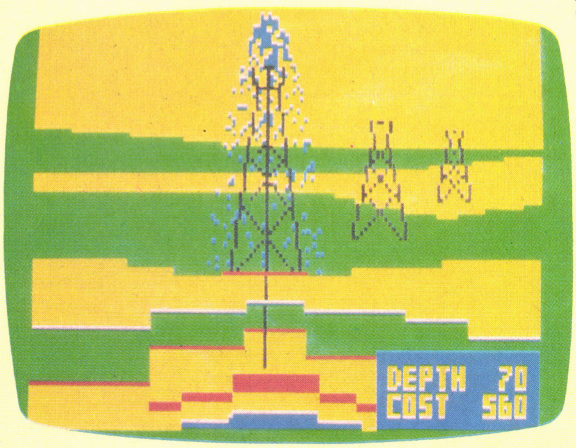
Computer Workout

TRS-80

A test report

By David Thomas

The TRS-80 could very well be considered the computer of the 1980s and not just because it was introduced at the beginning of this decade. In addition to affording you the opportunity to "build-it-yourself" when it comes to peripherals, the TRS-80 is user-friendly, with expansion capabilities that range from printers to modems to disk drives. The TRS-80 is a powerful personal computer with a vast library of software and a BASIC language simple enough to master in a few evenings yet complex enough to allow you to do some rather intricate programming. With all this going for it, the TRS-80 might be the perfect entry level computer for you. Interested? Read all the details.



The basic Model III sells for $1,000. It comes with a cassette drive (operable at either 500 or 1500 baud—that is, bits-per-second), 16K of memory and a parallel printer interface which allows most printers to be plugged right in. It is internally expandable to 48K of memory and two floppy disk drives may be added as well. Also available for the system are two external disk drives and an RS-232 serial communications interface for hookup to a modem or a serial printer. The price of all the modifications adds up but a good foundation configuration would consist of two drives and an RS-232 interface. There's really no need to worry about extra memory or expanding the memory at the start. You'll find that the basic 16K cassette system will be more than adequate for most of your basic computing needs.

Features: An Overview

The keyboard is of standard typewriter configuration and smooth action. It is not prone to keybounce, a problem which plagued earlier TRS-80 models and occasionally caused keys to send their characters to the system two or more times in a row. In addition to the lack of keybounce, the TRS-80 has another outstanding feature—keyboard rollover. This is *not* a canine trick but rather a function that will please all of you whose thoughts race ahead of your fingers when typing. On a conventional typewriter, if you strike a second letter before you've completely released the first, you often end up with keyboard jam up (or, in the case of a computer, a character that simply doesn't show up on the display). This sort of malfunction is virtually eliminated on the TRS-80. Some of the best typewriters can't match that.

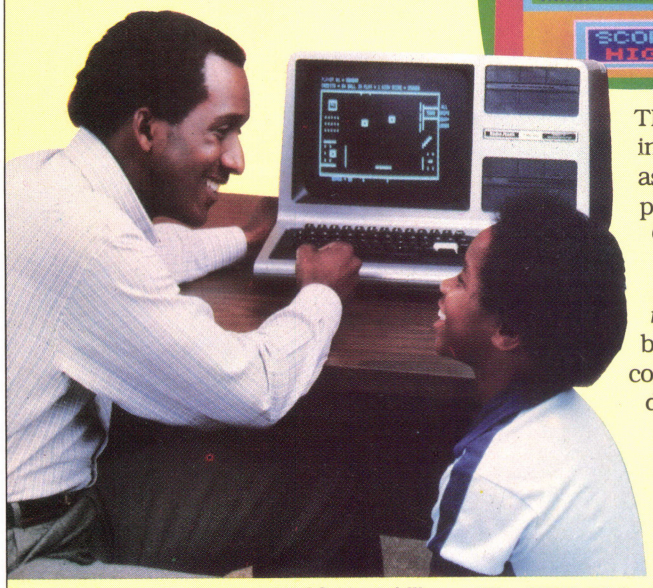
Two Sides

There are two sides to the Model III keyboard, however. As responsive as the keys are, they aren't all there. The standard ASCII (American Standard Code for Information Interchange) character set contains 30 control characters and about 10 printing characters (like square

How are you doing on your Christmas shopping list? I
hope that your shopping is complete before Christmas eve
night. I am swamped with my Christmas shopping list,a
"honey do" list at home , a car maintenance list, a "hot"
projects list at work and more. There is also a "followup"
file, a "get it done today" list, and a "didn't get it
done" list. Setting priorities and juggling items on those
"lists" becomes another chore in itself.

This Newsletter article was finished on schedule because
every morning my Model III has been confronting me with a "
You Didn't Get It Done "list which included
Write Doc Newsletter!).
Radio Shack
TRS-80
MODEL III
MICROCOMPUTER

brackets, underscore marks, backslashes and curly braces) which are not included on the TRS-80 keyboard. These characters are displayable on the screen but cannot be entered directly via the keyboard. The shift/down arrow combination is substituted for a control key and most of the control characters can be produced with it. Software can easily be written to compensate for this keyboard deficiency but, in my opinion, the keyboard could have been better laid out to begin with.



Many games fit the TRS-80 Model III. Pictured here, Paddle Pinball.

The high-resolution, 12-inch monitor is capable of displaying the full, standard ASCII character set (in a 64-characters-per line by 16-line-format), upper-and lowercase letters, 128x48-resolution block graphics and over 100 special characters including scientific and mathematical symbols, letters of foreign alphabets and more.

The cursor is a blinking block which can be changed to any character or turned off completely. Unlike most systems, the TRS-80 cursor isn't transparent—that is, if there is a character at the position of the cursor, it can't be seen. This becomes a problem in certain programs and the problem can be circumvented with good software but, again, it could easily have been done differently the first time.

The BASIC language in ROM is slow but not as slow as most interpreter languages go. Compiler BASICs—that is, BASIC languages that are *not* built in but must be loaded into the computer's memory by disk or cassette—are, on the average, ten times faster than built-in languages but speed, it should be noted, isn't always everything. The TRS-80 built-in BASIC is much more versatile, user friendly, powerful and accessible than any compiler language available for the TRS-80 so far. Although built-in languages usually use up a good deal of ROM memory, this is not a big problem with the TRS-80. The use of memory for program and data storage is sensible and efficient and the language includes several advanced features not found on many home computers such as trigonometric functions, direct memory access and powerful string-handling capabilities.

Reliability

The cassette port can be run at 500 baud for compatibility with Model I programs or cranked up to 1500 baud for faster loading. Unlike the Model I, which gives endless trouble with cassette loading, the Model III is not prone to unreliability in this area. With a good tape, a Model III cassette system gives virtually trouble-free operation.

Model III disk BASIC is very advanced, implementing features normally found only on big systems. Powerful string-handling functions such as the instring function—which tells quickly whether or not one string is contained within another—are easily performed. The user can even create his own function in disk BASIC.

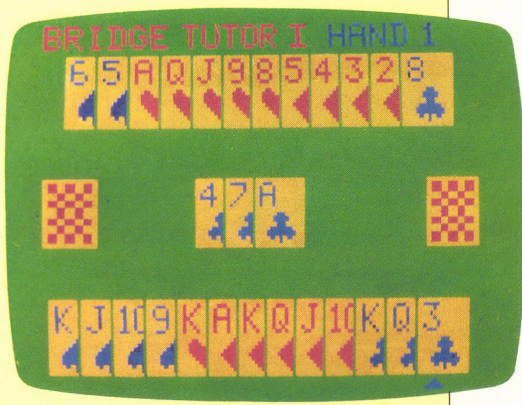
The printer interface and RS-232 interface are standard and almost universally compatible so many different kinds of printers and modems can be used simply by plugging them into the system.

The system runs on a Z80 microprocessor—one of the industry's most popular 8-bit microprocessors—which has a very powerful instruction set.

Disk vs. Cassette

There are vast differences in both performance and reliability between disk-based and cassette-based systems. The major differences in performance are greatly reduced file access time on disks and a greatly improved error record on cassettes.

Accessing files on disk is fast and efficient. Using a disk, access time can be reduced to 1/50 of that when using a cassette so you can put your finger on any file you want in a matter of seconds. For those who plan to use the system for business purposes, word processing, mailing lists or any other application where frequent file access is needed, choosing a cassette system would be like consenting to hand-wash all of the dishes in a 20-person household instead of putting out for a dishwasher. Disk is the only feasible storage medium in such cases. For many hobby purposes, however, where file access is infrequent and time is not money, cassette storage provides a low-cost alternative—though certainly no substitute—for disk.



Contrary to what salesmen and company promotions might want you to believe, a single disk system is very nearly as powerful as a two disk system. Unless you're planning to do a lot of disk-to-disk copying or want to keep over 150K of data (unlikely in most home applications), a single disk drive is more than adequate.

For those to whom speed is *not* everything, cassette systems have advantages of their own. If good tape is used, the error rate for cassettes is nearly zero. Don't waste your money on TRS-80 "certified" tape; buy well-known audio tape such as Maxell, Memorex or Fuji. And use of a higher quality tape recorder almost insures error-free loading every time.

Software

There is no shortage of good software for the TRS-80. Software is available from Radio Shack for small business applications, personal finance, etc. There is also a substantial library of Radio Shack games ranging from exceptional to highly unimpressive. There are a wealth of firms with top grade software for the TRS-80 (see box) including utilities, word processing, intricate adventure games and action games which use the somewhat limited graphics very effectively.

Memory Requirements

The TRS-80 handles memory well and, in general, 16K is sufficient to load most graphics games and many adventure games. Most hobby users will not feel the need for more than 16K for quite a while after acquiring the system. 32K is more than enough for cassette systems and is about all a disk system will need to have except in special cases where 48K will certainly cover the additional need.

Many hardware modifications exist for the Model III, provided by Radio Shack and others. Among the most common are memory expansion kits, which increase the memory capacity of the system by 16K. Radio Shack charges $50 plus a "required installation fee" to add 16K of memory to the system. The installation is simple, and for somewhat less money, kits and full instructions can be obtained by mail order. However, the saving is probably not worth the risk of damage to the system. Furthermore, Radio Shack has a policy of not servicing equipment with "non-Radio Shack" parts inside. Additionally, they reserve the right to remove any foreign parts they may find. There have been cases of machines taken in for memory expansion which have come back without their previously functional but "non-Radio Shack" disk drives!

Another common modification is the addition of an RS-232 serial communications interface, needed in order to use a modem and access remote data bases such as The Source and CompuServe. This is best left to Radio Shack, as it is not widely available in kit form.

There are an overwhelming number of kits available to expand a cassette Model III into a disk system. Radio Shack will install a double-density, 40-track, single-sided drive (and the controller board inside) for $750 (and then there's that required installation fee again). A comparable kit would run about $550, and by mail order, 80-track or dual-sided drives (drives which can use both sides of the

Continued on page 91

SOFTWARE SUPERMARKET

In addition to Radio Shack, there are several independent companies making software for the TRS-80 computer. Here is a partial list of them.

Adventure International (div. Scott Adams Corp.)
722 Commerce Circle
Longwood FL 32750
(305) 862-6917

Avalon Hill Microcomputer Games
4517 Harford Road
Baltimore MD 21204
(301) 254-5300

Basics and Beyond Inc
Pinesbridge Road, Box 10
Amawalk NY 10501
(914) 962-2355

Big 5 Software
PO Box 9078-185
Van Nuys CA 91409
(213) 782-6861

Broderbund Software Inc
1938 Fourth Street
San Rafael CA 94901
(415) 456-6424

Creative Computing
39 East Hanover Ave
Morris Plains NJ 07950
(201) 540-0445

Datasoft
9421 Winnetka Ave
Chatsworth CA 91311
(213) 701-5161

Dynacomp Inc
1427 Monroe Ave
Rochester NY 14018

Hayden Book Co
50 Essex Street
Rochelle Park NY
(800) 631-0856

Instant Software
Route 101
Peterborough NH 03458
(800) 258-5473

Krell Software
21 Millbrook Drive
Stonybrook NY 11790
(516) 751-5139

Microsoft Corp
10700 Northup Way
Bellvue WA 98004
(206) 828-8080

Personal Software
1330 Bordeaux Drive
Sunnyvale CA 94086
(408) 745-7841

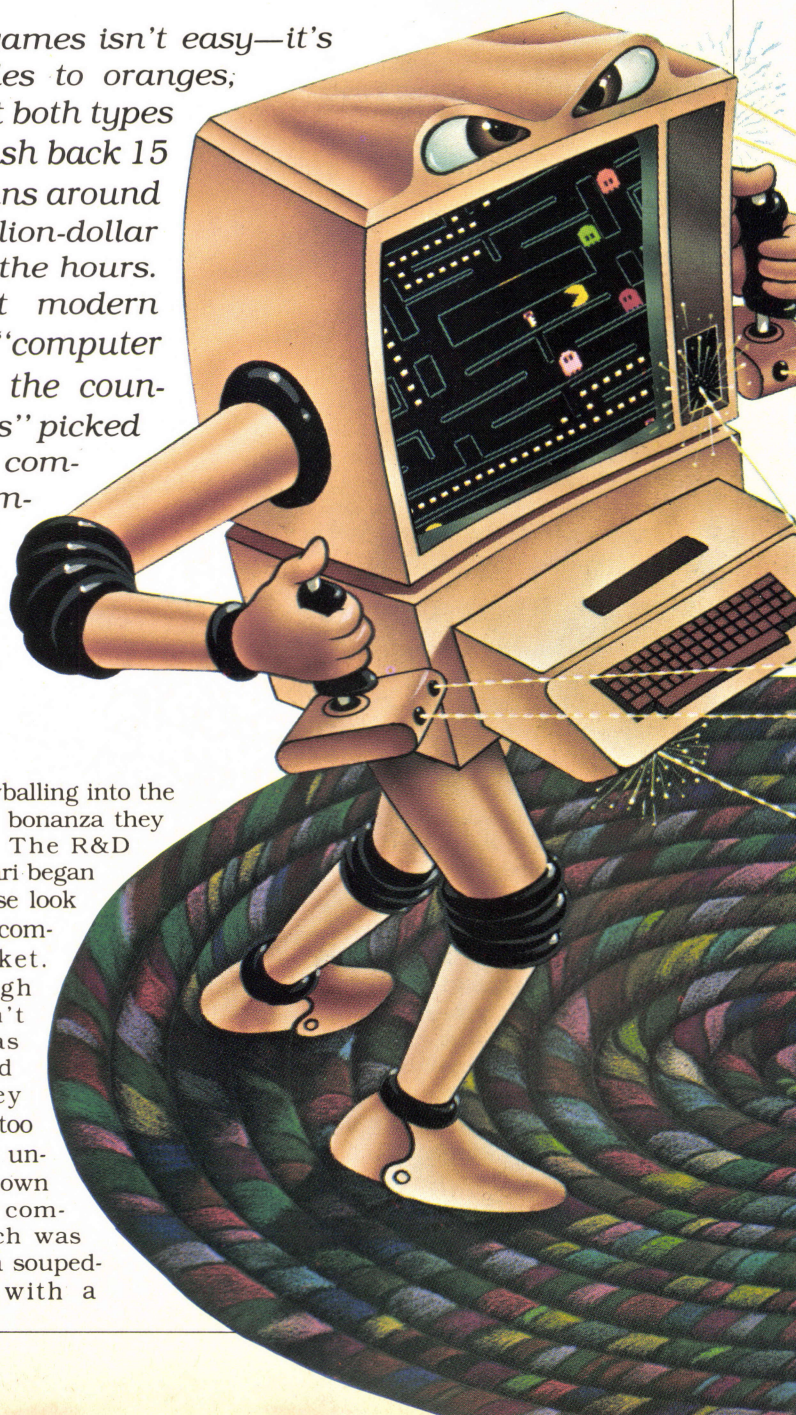
Strategic Simulations INC
465 Fairchild Drive 108
Mountain View CA 94043
(415) 964-1353

VisiCorp
2895 Zanker Road
San Jose CA 95134
(408) 946-9000

Computer games V

The war between the states-of-the-art

Comparing video with computer games isn't easy—it's more difficult than comparing apples to oranges, or even papayas to lima beans. To put both types of games in perspective, we should flash back 15 years when bored computer technicians around the country began using their million-dollar electronic brains to help while away the hours. Their efforts resulted in the first modern video games. During the 1970s, the "computer revolution" started erupting across the country. Initially, only "computer whiz-kids" picked up on it. The reasons were many and complex: "They cost too much," some complained. "They're too complicated," said others. Perhaps the main reason was related to the public's computer-phobic attitude—a fear of technology.

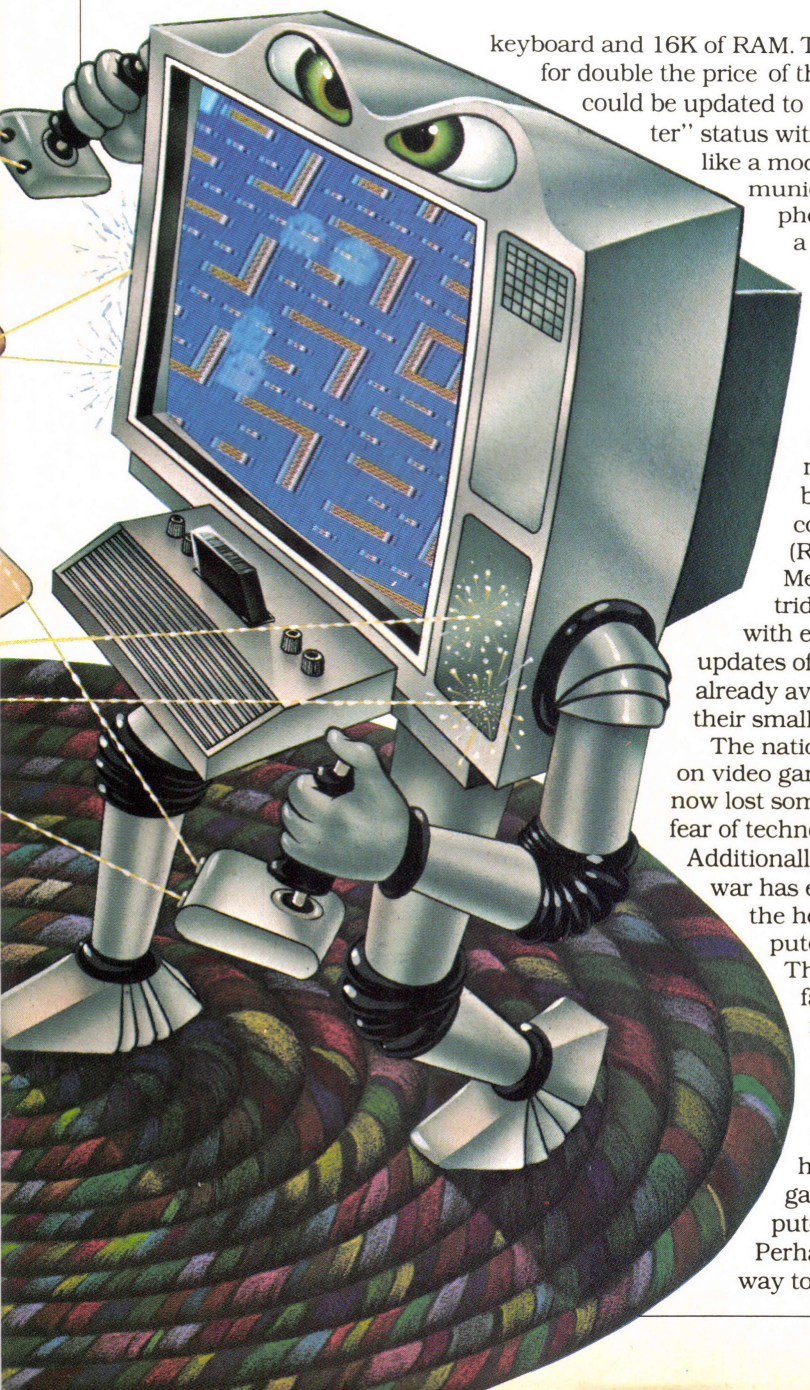


By Mark Wielage and Walter Salm

It was around this time that the first bombshell hit: Atari's venerable VCS—the "Video Computer System"—a misnomer if there ever was one. While these $150 game consoles only had a minimal amount of memory, the public ate it up.

Most true computer addicts looked down their noses at game systems like the Atari VCS and the Intellivision Master Component. But even the most cynical computerphile had to sit up and take notice once the home video games started snowballing into the billion-dollar bonanza they are today. The R&D teams at Atari began taking a close look at the home computer market. Even though sales hadn't taken off as they had hoped, they hadn't done too badly. Atari unveiled their own model 400 computer, which was essentially a souped-up VCS, with a

VS Video games



keyboard and 16K of RAM. The 400 sold for double the price of the VCS and could be updated to "full computer" status with peripherals like a modem for communicating over phone lines and a printer for hard-copy printouts. The Atari model 800, with 48K of RAM, followed. Atari made sure both systems could use ROM (Read-Only Memory) cartridge software, with exciting updates of games already available for their smaller VCS.

The nation, weaned on video games, has now lost some of that fear of technology. Additionally, a price war has erupted in the home computer field. These two factors have made computers accessible to everyone. So now we have video games *and* computer games. Perhaps the best way to compare them is to examine some games that are available in both formats.

Pac-Man

Playing *Pac-Man* on the VCS is not the greatest turn-on—not if you're an addicted coin-op player. Yet all of the elements are there—the little yellow gourmet, the pursuing ghosts and the energy pills in the four corners of the screen. Unlike the arcade version, the escape hatches are on top and bottom and the maze is laid out horizontally.

Perhaps the greatest disappointment of the VCS version is the graphics. Instead of being the cute, round, congenial dot we all know and love, Pac-Man is very angular and practically unrecognizable. He simply doesn't look well. Due to the limited memory of the VCS, only one ghost can appear on the screen at any one time. (Take a picture of the screen. You'll see that's right.) For this reason, the ghosts flicker annoyingly and you can't really tell with any accuracy whether they've turned blue and are ripe for eating or whether you're going to attack them only to find that they can still destroy you. A risky situation at best.

In addition, Pac-Man's familiar "wocka, wocka" has been replaced with an electronic boinging sound and the control the joystick affords you is imprecise and, often, random. Sometimes Pac-Man responds to your command. Sometimes he doesn't. In the VCS version, he's a very willful dot.

The 400/800 version, however is *very* close to the arcade version—including the graphics, the

Tommy Soloski

type of maze patterns, the difficulty of play; the introductory music and Pac-Man "wocka, wocka, wocka" sound effects as he gobbles up those dots are identical.

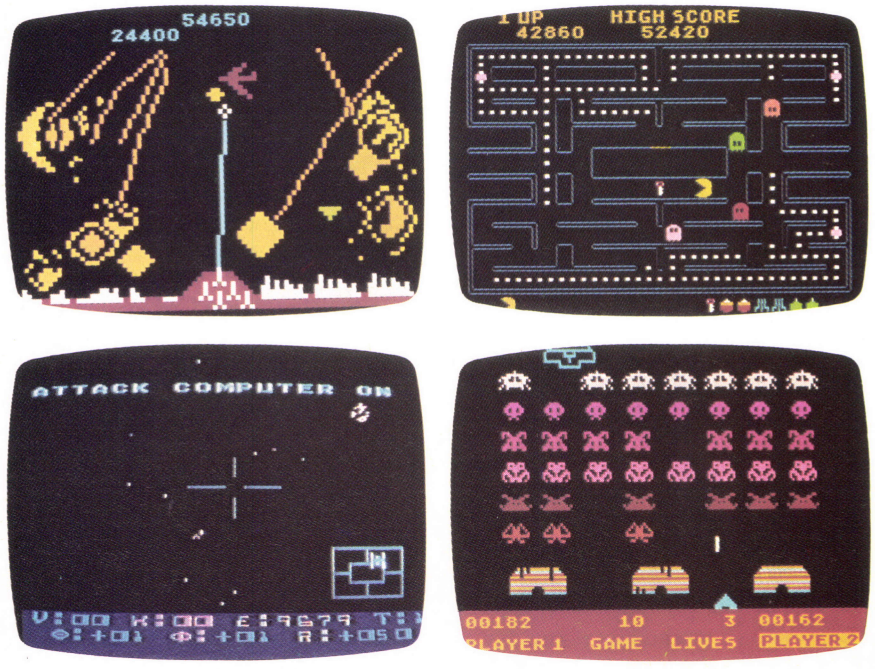
In fact, the only real difference between the 400/800 version and the one in the arcades is the TV screen orientation. The arcade has a vertical screen; the home version obviously has to play on a horizontal TV screen.

Like the arcade variety, the 400/800 game has exits on the sides, and it's all too easy to get gobbled while using the escape route when a pursuing ghost teams up with one of his buddies to box you in.

The computer game has bonus "fruits" to gobble up, where the VCS has a square "vitamin". All three are alike in that going after that bonus fruit or the vitamin can get you into a heap of trouble. The computer and arcade versions both keep track of the highest score played—a feature that the VCS game does not have.

Space Invaders

This granddaddy of video games set all kinds of records in its arcade version and got a fairly faithful copy in the Atari VCS game. You'd think that the Atari 400/800 computer *Space Invaders* would be even closer to the arcade game, but it's not. In fact, it's a completely *different* game with only a vague resemblance to either the arcade or VCS *Space Invaders*. The computer-generated invaders have unfamiliar shapes and motions, each row is a different color and the sound effects are different. To start, the aliens emerge a column at a time from a ship at the left of the screen. The command ship, which is worth extra points, passes overhead from time to time, but it too, looks different. There aren't as many variations in the computer game, and there are no shields to get in the way or to offer their arbitrary protection. The computer invaders are harder to shoot effectively, and earn far fewer points. Although the computer game provides a game pause command which allows time for answering the phone or nature's call overall the VCS version seems superior.



In this corner, computer games: MISSILE COMMAND (upper left), PAC-MAN (upper right), STAR RAIDERS (lower left) and SPACE INVADERS (lower right).

Missile Command

Neither of these games is really true to the track-ball-controlled arcade variety, but they're both high-intensity games that I wouldn't recommend for anyone who has a heart condition.

The VCS graphics are pretty good and there's a "children's" version which is great for beginners. There's no easy version for the computer game and this one really separates the men from the boys. The computer graphics are top notch, with the opposing team fielding such strange items as high-flying jet bombers that drop clusters of multi-warhead rockets and orbiting killer satellites.

Unlike the VCS game if your missile silo takes a bomb hit in the computer version, it's out of commission for several seconds. This prevents you from stopping other rockets that are descending on your precious cities. It can be very frustrating and heart-stopping.

Overall, while the VCS *Missile Command* is excellent, the 400/800 version is better and is the game of choice in this case.

Omega Race

This is essentially a black-and-white game in both the arcade and the Commodore VIC-20 versions. With the VIC, however, you can change colors. You can have your screen display with a bright blue background (or red or orange or brown) with a contrasting color for the ships and mines. Okay, it's not a big deal, but it *does* give you the

chance for variety and some pleasing color combinations.

The VIC action is not as fast as the arcade version at first, but that's because the controllers are harder to get used to. You can use either the joystick or the paddle controllers with the VIC but I'm not exactly enthralled with either one. They're both hard to use effectively for controlling the ship. The killer ships, by the way, are easier to shoot in the arcade version than in the home version.

Gorf

The Commodore VIC-20 version is faithful to the arcade game in most details. The graphics are good and

the only superiority on the part of the arcade game is that monstrous pistol-grip controller. But that's one of the sacrifices you make when you go to the home joystick. Actually, the home version is a little easier to play, especially since you can select that beginner's option with extra cannons.

This is one home game that really benefits from the new joystick controllers such as the one from WICO. With that accessory, your score will really zoom and that should overcome any objection to the lack of the arcade's pistol-grip system.

(There is also a VCS version which is reviewed on page 69 of this issue.)

Threshold

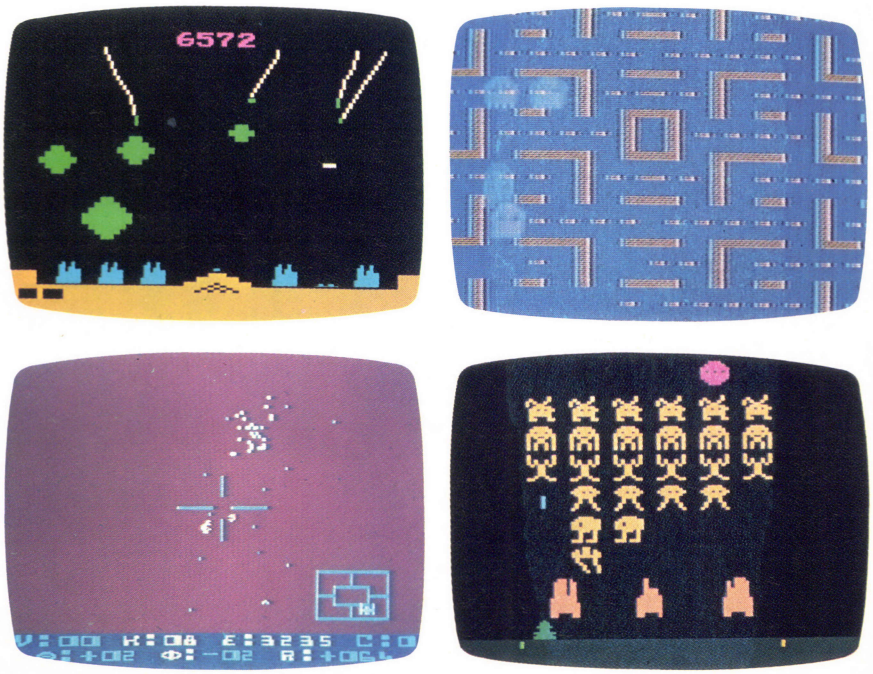
Threshold (Sierra/On-Line) is a truly delightful computer game, which has all the excitement associated with a standard shoot-'em-up. You steer your spaceship in a desperate attempt to evade your adversaries' deadly fire, while zeroing in on them with your laser cannon. There are 11 waves in all, each tougher than the last.

The Apple II version begins with five ships which are stacked vertically on the right side of the screen. Gauges are provided which indicate fuel supply and heat, the latter showing the temperature of your laser cannon which malfunctions if it fires too often—a feature not commonly seen in a game of this type.

The color and graphics are excellent—up to On-Line's usual high standards—though the sound quality is somewhat limited by the Apple II's internal speaker. *Threshold* is designed for use with either the keyboard or the Apple paddles. All things considered, *Threshold* should provide more than enough challenge for even an experienced computer gamer.

The Tigervision VCS cartridge loses some elements in the translation. It omits the "stacked ships" idea, along with the overheating laser cannon. Everything else is retained, including the design of the enemy aliens and the movement of your defensive spaceship, with the latter enhanced by adding an up and down thrust with the Atari joystick, a la *Gorf*. Sound effects and color were fair-to-good, though the resolution and movement were slightly limited when compared to the computer game.

In the end, the decision is up to you. If you don't have the money to plunk down for a true computer, there's no reason why you can't be completely satisfied with a video game system. The amount of information and complexity they've been able to program into the video game systems is remarkable. On the other hand, most computer games have some "special added attractions" that video games don't. If you like games and think you might like to try your hand in programming someday, buying an inexpensive computer is a good way to dip your toe in the water. You're sure to find advantages and disadvantages to both systems but, either way, hours of exciting play are available to you.□



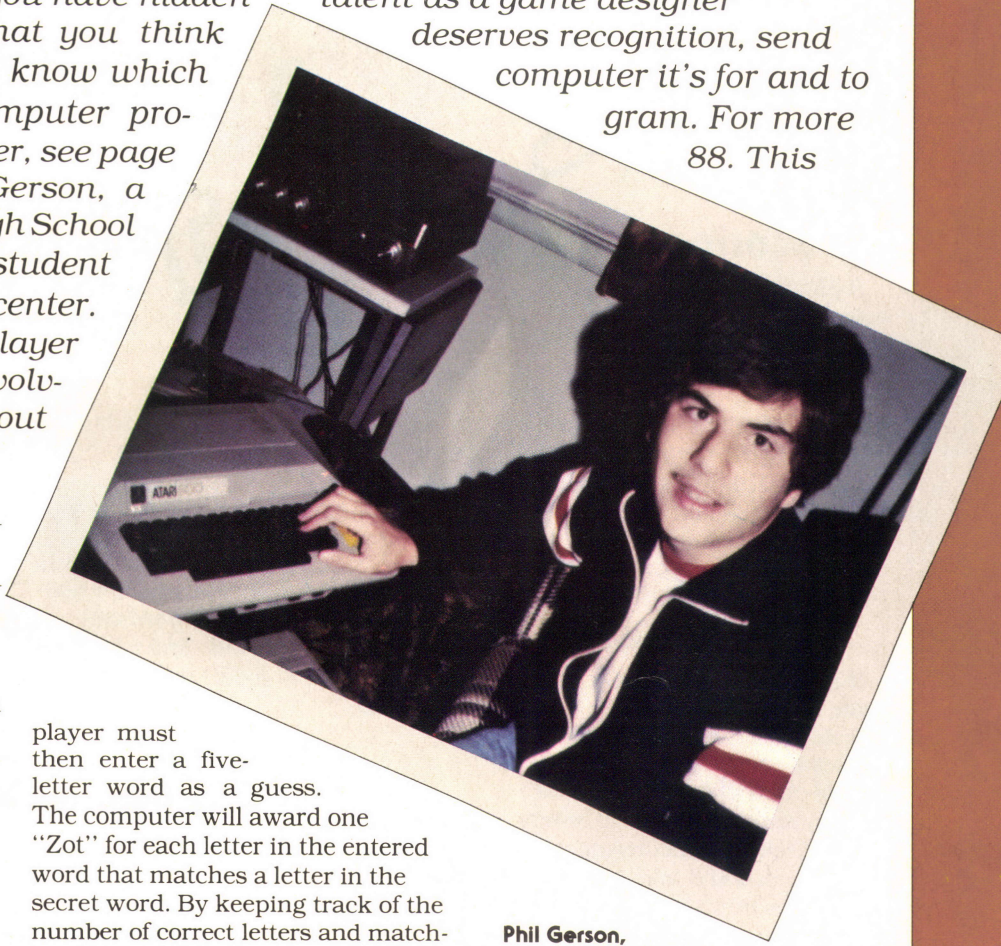
In this corner, video games: MISSILE COMMAND (upper left), PAC-MAN (upper right), STAR RAIDERS (lower left) and SPACE INVADERS (lower right).

"MY WIFE! MY BEST FRIEND! MY COLECOVISION!"

First Screening

Zotto!

We're waiting to discover you. Send us a game program that you've written and maybe we'll send you $100. Each month in First Screening, *we print a program that one of our readers has written. If you think you have hidden talent as a game designer and you have a game that you think deserves recognition, send it to us. Be sure to let us know which computer it's for and to include the complete computer program. For more information on how to enter, see page 88. This month's winner is Phil Gerson, a senior at Sleepy Hollow High School in Tarrytown, N.Y. He's a student advisor in the computer center. He's been a videogame player since 1972. He has been involved with computers for about three years.*



Phil Gerson, author of ZOTTO

ZOTTO

Zotto is a five-letter word guessing game for one or more players, similar to established games such as *Hangman*, that are played with a pencil and paper. It is written in BASIC for Atari computers, but can be modified to run (perhaps even better) on other systems.

How To Play

In a one-player game, the computer will randomly select a five-letter word from its memory. The player must then enter a five-letter word as a guess. The computer will award one "Zot" for each letter in the entered word that matches a letter in the secret word. By keeping track of the number of correct letters and matching them to the words entered, the

player gets clued in to the letters in the secret word, and ultimately to the word itself. A secondary object of the game is to build a high score (see section on scoring).

When two or more players are involved, one serves as the guesser and the others decide on the secret word to enter. Though the cursor moves across the screen when the secret word is entered through the keyboard, the letters themselves are not displayed. So it is not necessary for the guesser to leave the room or close his eyes. Players switch roles throughout the game. The winner is determined by the number of points scored during the agreed number of rounds. In the case of a tie, the player taking the fewest guesses wins.

Scoring

A player receives one point for each Zot awarded during the course of the game. Points are deducted for each guess made. This keeps a player from piling up the score by re-entering previously guessed words with high Zot totals. It can also result in a player receiving a negative overall total. Depending on the score, the computer gives a rating of "bad" to "excellent."

Strategies

It's recommended that a player write down the guesses and the number of Zots it earned. That makes it easier to come up with a logical order of guesses, and to quickly eliminate unused letters. When deciding on entering a secret word, you should take into account that words in which the same letter is used more than once often confuse the guesser and generally require more turns. These are, therefore, the hardest and best to have others guess, though not necessarily the best to have to guess!

Words that are prime examples of the above strategy include onion, madam, poppy and aorta.

Another excellent strategy is to select words that have an abundance of consonants. People tend to guess vowels first and you can really stump them if your word contains very few vowels and a lot of consonants. A good example: rhyme.

Program Modifications

The program as written has only ten words in the memory for use by the computer in the one version of the game. This roster may easily be expanded. To do this, simply list the program and add more data statements between those in lines 730-820. Then increase the number in the random statement in line 700, listed in the program as 10. This will then reflect the new number of data statements in your revised program.

Final Thoughts

The use of five letter words in a guessing game like this is not a new concept.

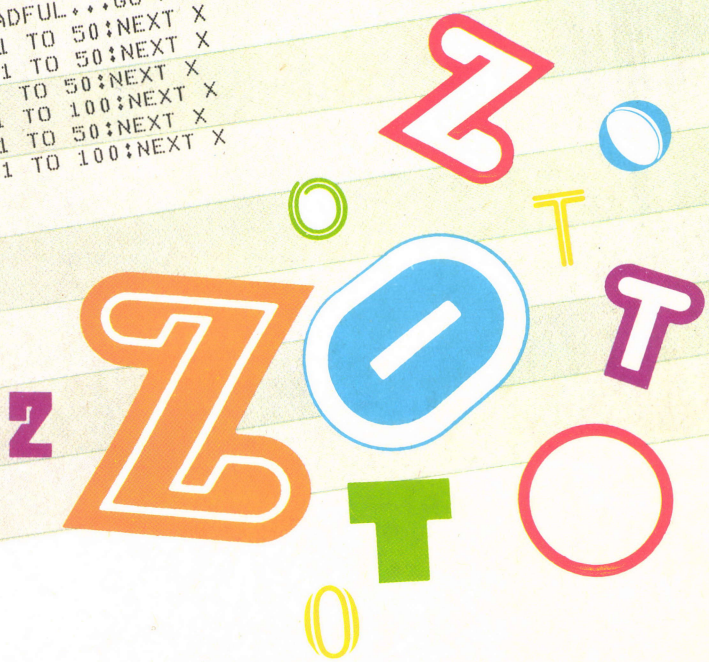
Zotto is loosely based on *Jotto*, a game I used to play with a friend. When programming it, the first thing I did was to find a way to have the computer randomly select a word from its vocabulary. There are an infinite number of words you can put in the computer's memory.

I designed *Zotto* for the Atari computer, but you can very easily make a few small modifications and play the game on any other computer. The "?" symbol is exactly the same thing as a print statement and you can feel free to change the left, right and middle dollar sign commands. I had a good time programming this game and I hope that a lot of the readers will have a good time playing it also. If any of them would like to get in touch with me to discuss the game or computer games in general, they should write to me in care of *Electronic Fun*.□

In order for us to consider your entry, we need the following items: a complete computer program, a brief game description, photographs or drawings of the graphics, a picture and a self-addressed stamped envelope. Send it to: First Screening, Electronic Fun, *350 East 81st St., NY, NY, 10028. Include your phone number.*

```
5 ? "3"
7 ? :? :? :? :? :? "                    ZOTTO"
8 ? :? "                              by"
9 ? :? :? "                    Phil Gerson":FOR A=1 TO 500:NEXT A:? "3"
10 DIM A$(9):DIM B$(9):Z=0:T=0:DIM C$(50):DIM M$(1):DIM W(40,40)
12 ? "WELCOME TO 'ZOTTO' DO YOU WANT INSTRUCTIONS (1=YES,2=NO)":INPUT Y:IF Y=1 T
HEN GOSUB 2000
15 ? :? :? :? "ARE THERE 1 OR 2 PLAYERS":INPUT P
17 IF P=1 THEN GOSUB 700
20 IF P=2 THEN GOSUB 1000
30 ? "ENTER A 5 LETTER WORD OR TYPE 'LIST' FOR A LIST OF THE WORDS YOU HAVE ALRE
ADY USED"
31 INPUT B$:IF B$="LIST" THEN GOSUB 7000
33 T=T+1
35 FOR Q=1 TO 5:LET W(Q,T)=ASC(B$(Q)):NEXT Q
39 J=0
40 A=ASC(A$(1,1))
50 B=ASC(A$(2,2))
60 C=ASC(A$(3,3))
70 D=ASC(A$(4,4))
80 E=ASC(A$(5,5))
90 F=ASC(B$(1,1))
100 G=ASC(B$(2,2))
110 H=ASC(B$(3,3))
120 I=ASC(B$(4,4))
130 K=ASC(B$(5,5))
140 IF A=F THEN J=J+1:GOTO 190
150 IF A=G THEN J=J+1:GOTO 190
160 IF A=H THEN J=J+1:GOTO 190
170 IF A=I THEN J=J+1:GOTO 190
180 IF A=K THEN J=J+1
190 IF B=F THEN J=J+1:GOTO 240
200 IF B=G THEN J=J+1:GOTO 240
210 IF B=H THEN J=J+1:GOTO 240
220 IF B=I THEN J=J+1:GOTO 240
230 IF B=K THEN J=J+1
240 IF C=F THEN J=J+1:GOTO 290
250 IF C=G THEN J=J+1:GOTO 290
260 IF C=H THEN J=J+1:GOTO 290
270 IF C=I THEN J=J+1:GOTO 290
280 IF C=K THEN J=J+1
290 IF D=F THEN J=J+1:GOTO 340
300 IF D=G THEN J=J+1:GOTO 340
310 IF D=H THEN J=J+1:GOTO 340
320 IF D=I THEN J=J+1:GOTO 340
330 IF D=K THEN J=J+1
340 IF E=F THEN J=J+1:GOTO 385
350 IF E=G THEN J=J+1:GOTO 385
360 IF E=H THEN J=J+1:GOTO 385
370 IF E=I THEN J=J+1:GOTO 385
380 IF E=K THEN J=J+1
385 ? "YOU HAVE ";J;" ZOT(S)"
387 Z=Z+J
390 IF J<5 THEN 30
400 IF A=F AND B=G AND C=H AND D=I AND E=K THEN 420
410 GOTO 30
420 ? "YOU GOT THE WORD.IT TOOK YOU ";T;" TURN(S)":GOSUB 5000
425 GOSUB 500
427 ? :? "THANK YOU FOR PLAYING 'ZOTTO'"
430 END
500 Y=100
510 LET Y=Y-(5*T)
520 ? "YOU RECEIVE ";Y;" POINTS FOR THE NUMBER OF TURNS IT TOOK YOU TO GET"
610 PRINT "'ZOTTO' AND YOU ALSO RECEIVE ";Z
620 PRINT "POINTS FOR THE ZOTS YOU HAVE "
630 PRINT "ACCUMULATED DURING THE COURSE OF"
640 ? "THE GAME."
650 LET G=Y+Z
660 ? :? "YOUR GRAND TOTAL IS ";G;" POINTS."
665 GOSUB 4000
670 RETURN
690 END
700 X=INT(10*RND(9)+1)
710 FOR A=1 TO X
```

```
700 X=INT
710 FOR A=1 TO X
720 READ A$
730 DATA SASSY
740 DATA HELLO
750 DATA VOICE
760 DATA GAMES
770 DATA PAUSE
780 DATA BASIC
790 DATA START
800 DATA RESET
810 DATA MUSIC
820 DATA CHASE
830 NEXT A
840 RETURN
1000 ? "SELECT ONE PLAYER TO PICK THE WORD,AND ONE PLAYER TO GUESS"
1010 ? :? :? :? "ENTER THE SECRET WORD AND PRESS 'RETURN' WHEN THE SCREEN TURNS
BLANK"
1015 FOR Q=1 TO 700:NEXT Q
1020 POKE 756,55
1030 INPUT A$
1040 ? "3";:POKE 756,226
1050 RETURN
2000 ? "          ZOTTO"
2010 ?
2020 ? "     INSTRUCTIONS"
2030 ? :? "  ZOTTO IS A FIVE LETTER WORD GUESSING GAME FOR ONE OR TWO PLAYERS. "
2040 ? "IN A 2 PLAYER GAME ONE PLAYER ENTERS A SECRET 5 LETTER WORD AND THE OTHE
R PLAYER TRIES TO GUESS IT."
2050 ? "IN A ONE PLAYER GAME THE COMPUTER SELECTS THE FIVE LETTER WORD."
2060 ? :? "THE COMPUTER GIVES 'ZOTS' AS CLUES. IF YOU GET '1 ZOT' IT MEANS THAT
YOU HAVE MATCHED 1 LETTER."
2070 ? "IF YOU GET '2 ZOTS' IT MEANS THAT YOU HAVE CORRECTLY GUESSED 2 LETTERS E
TC."
2075 ? "WHEN THE SECRET WORD IS GUESSED,POINTS WILL BE AWARDED ON HOW WELL THE G
UESSER DID."
2080 ? :? "PRESS ANY KEY TO START"
2090 INPUT M$:? "3"
2100 RETURN
4000 IF G<100 THEN 4020
4010 ? :? "YOUR RATING IS:EXCELLENT!!!":RETURN
4020 IF G<85 THEN 4040
4030 ? :? "YOUR RATING IS:GOOD!!":RETURN
4040 IF G<70 THEN 4060
4050 ? :? "YOUR RATING IS:ABOVE AVERAGE!":RETURN
4060 IF G<50 THEN 4080
4070 ? :? "YOUR RATING IS:AVERAGE":RETURN
4080 IF G<35 THEN 4100
4090 ? :? "YOUR RATING IS:FAIR":RETURN
4100 IF G<20 THEN 4120
4110 ? :? "YOUR RATING IS:POOR":RETURN
4120 IF G<0 THEN 4140
4130 ? :? "YOUR RATING IS:BAD":RETURN
4140 ? :? "YOUR RATING IS:DREADFUL...GO READ A DICTIONARY":RETURN
5000 SOUND 0,162,10,10:FOR X=1 TO 50:NEXT X
5010 SOUND 0,121,10,10:FOR X=1 TO 50:NEXT X
5020 SOUND 0,96,10,10:FOR X=1 TO 50:NEXT X
5030 SOUND 0,81,10,10:FOR X=1 TO 100:NEXT X
5040 SOUND 0,96,10,10:FOR X=1 TO 50:NEXT X
5050 SOUND 0,81,10,10:FOR X=1 TO 100:NEXT X
5060 RETURN
7000 ? "3":FOR A=1 TO T
7010 FOR Q=1 TO 5
7020 ? CHR$(W(Q,A));
7030 NEXT Q
7040 ?
7050 NEXT A
7060 ? :? :? :GOTO 30
```



TRS-80

Continued from page 81

magnetic medium) can be obtained. Radio Shack simply does not furnish 80-track or dual-sided drives. These drive kits are reported to be easy to install. According to one satisfied kit installer, the hardest part of the project was removing the dummy disk-drive plastic cover from the front of the machine.

Another less common modification is a "speed-up modification," which allows hardware and software control of CPU speed. Speed can be reduced by one half (1MHz), or doubled (4MHz). The ability to control the speed would permit the user to slow down program listings which go by too fast to be read, or to speed up tedious games, adding a new challenge. These kits cost about $50 and are easy enough to install if you are handy with a soldering iron.

As the sound from the cassette port is not very musical, a hardware package known as Orchestra 90 is available, with accompanying software. It allows synthesis of five separate voices, each with its own tone quality, regsister, and relative weighting or volume. This package costs about $200 for both software and hardware. As this package requires a lot of file access, the cassette is not recommended.

The Model III is easy to program, and therefore a great system to

Continued on page 92

THE TOP TEN

	Home	Arcade
1.	PITFALL (Activision)	JUNGLE HUNT (Taito)
2.	DONKEY KONG (Coleco)	MS. PAC-MAN (Midway)
3.	MEGAMANIA (Activision)	DONKEY KONG JR. (Nintendo)
4.	FROGGER (Parker)	TRON (Midway)
5.	BERZERK (Atari)	DONKEY KONG (Nintendo)
6.	EMPIRE STRIKES BACK (Parker)	MOON PATROL (Williams)
7.	DEFENDER (Atari)	PAC-MAN (Midway)
8.	DEMON ATTACK (Imagic)	TUTANKHAM (Stern)
9.	DUNGEONS & DRAGONS (Mattel)	CENTIPEDE (Atari)
10.	PAC-MAN (Atari)	GALAGA (Midway)

Walter Salm compiled the Home Top Ten by calling retailers all across the country. The Arcade Top Ten comes courtesy of RePlay Magazine.

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learn on. The tutorial manual from Radio Shack brings BASIC fluency within just a few evenings. Though its display format is non-standard (64x16 as opposed to the usual 80x24), the Model III makes a fairly good communications terminal for access to The Source, CompuServe and other networks. Numerous communications programs are available. Make no mistake—the TRS-80 graphics resolution is, at best, fair compared with most other systems. If it's awesome graphics you crave, the TRS-80 is not for you. However, there are many good games available which make the most of what's there. Education becomes fun with teaching programs, which can be written easily, and some complete educational packages are already being sold by Radio Shack. Of course, most programmer-hours spent on TRS-80's have been devoted to games, and, consequently, the TRS-80 is largely a games computer. Many truly excellent games are available now, and there is no evidence that they will stop coming out any time soon. Because of its efficient use of memory, 16K goes a long way. With just the basic 16K cassette system, it is possible to play several versions of chess, numerous action games, absorbing adventures and many more.

If you are considering a Model III, many Radio Shack computer centers nationwide offer free BASIC courses to get potential customers used to the system. Also, many Radio Shack stores have a Model III on display.

Overall, the TRS-80 Model III is a good system where too much specialization is not desirable. It provides a good balance between ease of operation, expandability and availability of supporting software. And don't forget the low price. □

EMPIRE

Continued from page 30

group of Walkers—they can't pass each other. You damage it without killing it. Then what you want to do is to go forward on the radar band until you reach the *last* Walker and damage that one, too. This will serve to lead the next batch of Walkers out much more slowly. Then, after you've damaged the front and hind Walkers, you go pick off all the middle ones.

EF: Did you hear that if you turn the power off and on very fast, the Walkers disappear from the screen?

Rex: Actually, that's interesting. I had heard it only happens if you hit the game reset and game select in a certain way. When you manipulate those switches, you will influence the programming of any game.

EF: Why did you pick the number 48

Continued on page 96

Q: What is the hardest thing in the world?
A: Tearing yourself away from an EPYX game.

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EPYX

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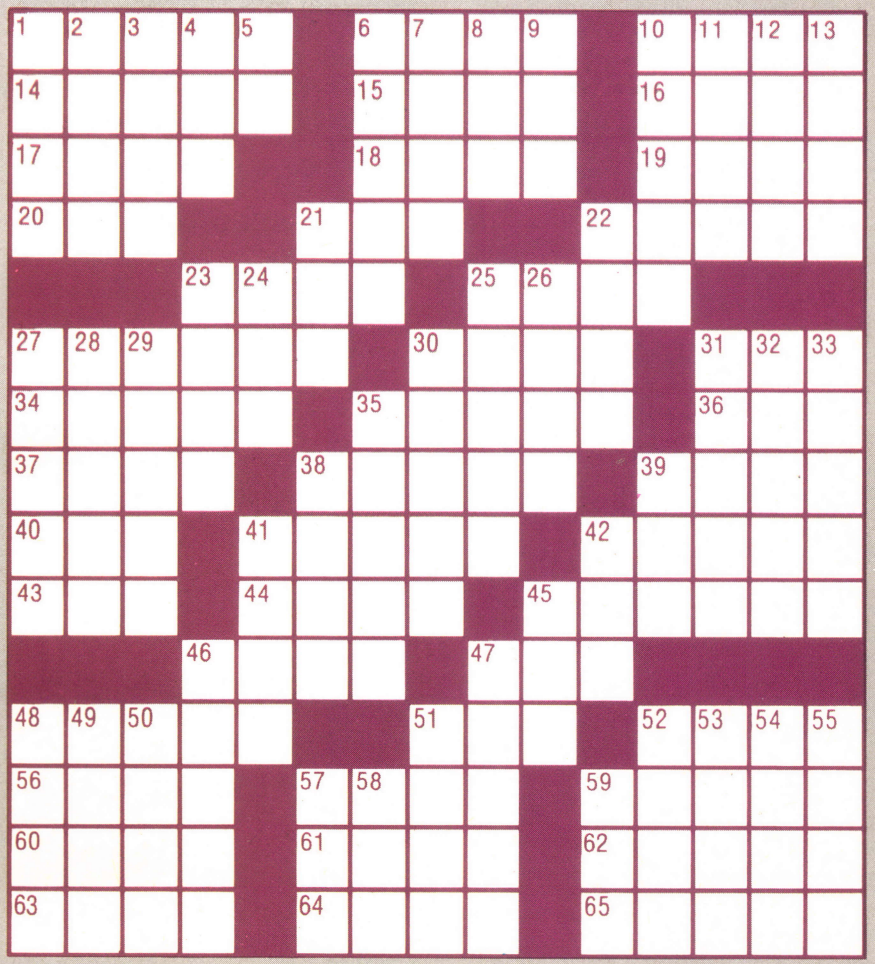
Crossword Puzzle



ACROSS

1. Space Invaders do this to you
6. What happened when you cut yourself
10. Russian planes
14. Your opponent sometimes
15. Reset
16. Part of QED
17. The kind of party Alice attended (2 words)
18. What Pac-Man does
19. Computer information
20. *Wizard of* _____ (video game)
21. What Turbo is
22. To put (Spanish)
23. Hide and _____
25. *Kaboom!* minus *ab*
27. Crawly things the French eat
30. Type of ranch
31. Computer part (abbr.)
34. Boston team
35. Part of 2084 game
36. Suffix with so- and popu-
37. Part of a car
38. Bar used for lifting
39. Baseball pitcher Roberto
40. Norma _____ (Sally Field role)
41. Bees make it
42. First word on *Pac-Man* screen
43. *Berzerk* death
44. Rock of _____
45. Activision game
46. He says "Ribbet"
47. Type of computer memory
48. Firing speed
51. Precious jewel
52. Prefix for -chute and -graph
56. Not a-near
57. Hideous monster
59. *Demon Attack* designer
60. Wise
61. Baseball scores
62. Word with *Invaders*, *Spartans* and *Chase*
63. Predicate (abbr.)
64. Eight bits
65. *Battlezone* foe

DOWN

1. Lobster hand
2. Arcade game Robby
3. Computer owner
4. *Air/_____ Battle*
5. Atari baseball (abbr.)
6. _____ *out* (Atari game)
7. Type of jet
8. Eastern Daylight Time (abbr.)
9. Disk operating system (abbr.)
10. Telecomputing backwards
11. Khomeini's domain
12. *Star* _____ (arcade game)
13. _____ *Raiders*
21. Consumer Electronics Show (abbr.)
24. More than one aerial railroad
25. Video game book author
26. Smell
27. Type of neckwear
28. New Spectravision game
29. *Gangster* _____ (Spectravision game)
30. Peace birds
31. Neat and _____
32. Famous Hacker
33. They hold food
35. Go back on
38. Computer language
39. Something that is mightier than the sword
41. A difficulty level
42. Stage of sleep
45. Arcade game Frisky
46. Got off a shot
47. Half of ET's favorite candy
48. Scrape
49. Same as 56 across
50. One of a 100+ in this magazine
51. *Robotron* foe (abbr.)
52. Young insect
53. *Star Master* designer (first name)
54. An asteroid is one
55. Mario's enemies
57. *Quest for the* _____
58. Your man on the screen
59. First Savings and Trust (abbr.)

Answers in next month's issue.

TV GAMES

Continued from page 45

terrupted by the bleeps and boops of the machine. But Tony hates video games so much, he had us remove the scene. I've seen a recent script from the show, and the scene appeared again virtually intact.

However, the most promising of them all seems to be video game-oriented game shows. Kelly believes that within a few months "virtually every game show will incorporate some kind of video game theme." JM Productions has already shot the pilot (as well as two additional segments) for *Starcade*. According to the company, the program is "the first video game TV show featuring competition on video arcade games. Company president

If the trend toward video game-themed shows continues, it may only be a matter of weeks before we see Captain Furillo busting video game pirates, Jack attempting to entice Janet with a game of strip Intellivision poker, or J.R. arranging a takeover of Bally/Midway.□

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EAT REPORT

Continued from page 22

and his disarming grin were removed from store shelves everywhere.

Starship, Slot Machine and Miniature Golf—These were three games discontinued early in the Atari's VCS's life. They are still being sold at some Sears stores as *Outer Space, Slots* and *Arcade Golf. Space War, Flag Capture, Surround, Black Jack* and other unpopular games also may be discontinued.

Steeplechase, Stellar Track, and Sub Commander—These are the names of three Atari cartridges sold exclusively at Sears. Thus, they are rarer than other games. *Stellar Track* is like a *Star Raiders* board game.

Perhaps the most valuable cartridge is the demo cartridge. Frequently, a manufacturer will plan a game and then decide to change it entirely. But because its salesmen have to get orders on a game, they've already sent out versions to their salesmen and the press. However valuable, these games are almost impossible to find. Among some of the planned Mattel games which may exist in demo form are: *Motorcross, Land Battle, Minotaur*, and the original *Boxing* (*Boxing* in Mattel's catalog, as you might have noticed, shows the "men" much smaller in proportion to the "ring" than in the actual version).

If you want to find out more about collecting rare video game cartridges, you should check out some of the cartridge clubs and trading papers. But best of all, keep your eyes open to what's out there. If there is an old game that is being discontinued or a game with a defect in it, grab it. Game collecting can make you a lot of money!□

$300 ARCADE

Continued from page 40

have someone knowledgeable about the innards of arcade games accompany you to be sure you're not buying yourself a lemon.

• There's no denying that you can get a great price at an auction, but, just like arcades, auctioneers offer no warranty and no servicing.

Now that you know what sorts of places offer used arcade games, how do you begin to find these places? A good question and one I've anticipated. To give you a head start, we've put together a brief buyer's guide of possible outlets. If none of the companies listed are in your area, you can also try looking in the Yellow Pages under "Amusement Devices."

With any luck, you should be able to find an arcade game that just suits your price requirements. Happy hunting!

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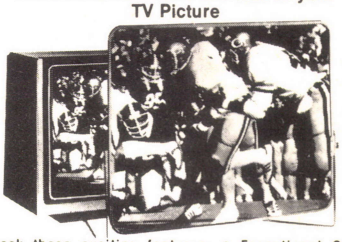

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EMPIRE

Continued from page 92

as the number of times you have to hit the Walker to destroy it?

Rex: It was trial and error, really, except for the fact that according to the computer programming, it had to be a multiple of eight. That's one of the things people find frustrating about the game. You can't just hit something and kill it like in similar games—*Defender* and *Chopper Command. Empire* is a different game. Rather than run around blowing up lots of little things, you have to slug it out with one big thing and really work it over. The point we were trying to get at was that you'd spend a lot of time on one enemy. The player tends to get fewer immediate rewards this way, but the reward of blowing up an Imperial Walker is a very gratifying one. One of the ideas we had kicked around early on was that you would chip a piece off the walker as it was destroyed, instead of changing its color.

EF: After you had the basic game finished, did you make any fine tuning changes?

Rex: After we finally got the game to the point where we were comfortable with it, we submitted it to a play test. For one or two sessions, we had kids come in and play it. We recorded the scores, and this helped us determine difficulty levels. We gave them forms to fill out so they could tell us what they liked or disliked about the game, how it compared to other games they've played and things they'd like to see in the game. We did incorporate some of that feedback into the final product.

EF: I find the toughest part of the game is trying to land for repairs. Did you plan it that way?

Rex: It's exciting because as you're trying to land, the Walkers are still pouring out volleys of fire at you. It's meant to be somewhat difficult and it also adds a humorous element to the game. The first time we had people test the game, we saw them cracking up as they were skidding along the ground trying to land. We knew that was in the game to stay.□

MILLION

Continued from page 76

sight of what you're doing. "You're with it so much that you get a sheltered view of it," explains Robert Goldstone, a college freshman who designed *Dungeons of Doom* on his TRS-80 and sold it to Micro-Labs. "You should go into another room when someone's playing so you don't keep telling them what to do. That's the only way to find out if the instructions are clear. People kept goofing up on things that I thought were obvious, and that helped me see what still needed work."

- *Don't forget that your program has to appeal to a wide range of people.* After all, klutzes like to play games as much as the nimble-fingered. "You have to design it to accommodate players at all different levels," stresses Atari's Peter Nelson.

In other words, the game should include several options of increasing difficulty, and it should incorporate skills that the average person can acquire by practice. If it's so complex and demanding that only the dedicated pro can master it, it will quickly discourage the neophyte. In addition, make sure the program is user-friendly—although documentation is important, no one wants to slug their way through 50 pages of instructions.

- *Fine-tune your program as much as possible.* You'll run into pitfalls along the way, but that's part of the fun—and should be part of the game as well. It's important to throw a multitude of obstacles in the path of the player, but not so many that it's impossible to win. The more original the hazards, of course, the better.
- *Take a break now and then.* Designing a successful game demands an incredible amount of patience, and there'll undoubtedly be days when you feel like smashing your computer to chips. Before you take such drastic measures, you might think about putting it all aside for a couple of days. The break will clear your mind and enable you to return to the programming board with a fresh perspective and, hopefully, some new ideas.

"It's like writing a novel," says Gluck. "It needs to be constantly refined, and it's a very frustrating process. One potential problem —and it happened to me—is that the machine can suddenly blink out and you can lose your program. To protect against that, you should always transfer what you've done to another disk or cassette."

- *First impressions count.* That's why you should put as much care into the introductory sequences as you put into the heart of the game itself. Incorporate some of the themes, graphics and sound effects from the program, and do the same for the conclusion. If you end with a flourish you'll leave them panting for more.
- *Before submitting a game, take a breather and see how you feel when you come back to it.* If you're satisfied that you've done the best you can, you're ready to go. At this point you might consider copyrighting the program. The chances of any reputable firm ripping off your idea are miniscule, but it never hurts to protect yourself fully. Contact the Copyright Office at the Library of Congress and request the appropriate forms. They'll want a print-out of the program, not the actual disk or cassette. You can also send along a videotape of the actual game-playing process. The fee for registering your material is $10.
- *When you decide which company will receive first crack at your game, call or write to find out about their submission requirements.* Many have author information packets detailing the procedures you should follow, and most will accept either a disk or cassette. And make sure you address it to the right person or department. That way the firm won't play merry-go-round with your software, tossing it from office to office while you sit by the phone and wonder why you haven't heard anything.

Chances are you'll get an answer pretty soon—indeed, it should take a computer whiz just a couple of minutes to determine if a game is worth buying. Even if a firm rejects your baby, they'll often tell you why. Painful as it may be, pay attention to their suggestions; they'll come in handy on your next effort. After all, the company is in the business to make money, and they know what sells and what doesn't.

If they accept your game, congratulations! But be prepared for more work. "Every game goes through two or three major rewrites," points out Brock at Sirius. "And an author has to be flexible and cooperative about that. They may believe it's finished, but our standards are often higher than they think."

Once you're signed a contract, lean back and wait for the cash to roll in. And if you didn't hit the mark the first time around, don't give up. Remember, it's not whether you win or lose, but how you program the game. □

David Tuller is a New York-based freelance writer.

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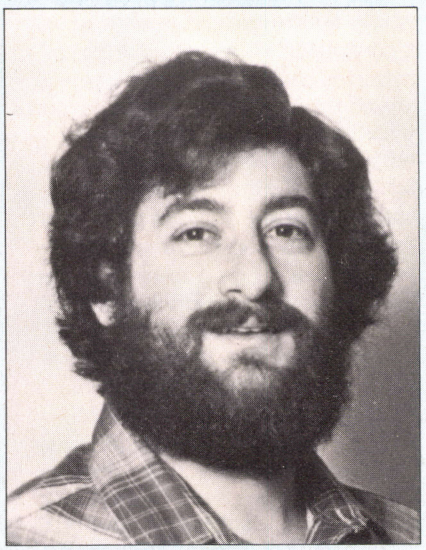
Hi there, gossip freaks and fanatics! Here's the inside poop, hot scoops and nasty dirt flying around **Silicon Valley**. Happy Birthday, **PONG!** Believe it or not, it's been 10 years since it revolutionized gaming forever . . . **Larry Kaplan**, designer of **BRIDGE** and **KABOOM!**, has left **Activision** for parts unknown . . . Meanwhile, some guy walked in off the street to show **Activision** a game and they bought it and made the guy a full-time designer! That game will be coming out early in 1983, according to my secret source . . . Look for **TURMOIL, MEGAFORCE** and **ALIEN** games from **Fox** this month, and next month they're releasing **FANTASTIC VOYAGE**. All are for **Atari VCS** . . . Have you seen the new "talking" dollar-bill changers in the arcades? They're enough to make you **barf** . . . eighty-eight arcade



Larry Kaplan

games were released in 1982, and **Sega/Gremlin** led the way with nine of them . . . Is **MCA** pulling out? We keep hearing about their games, but nothing gets released. Then they go and sell the rights to **E.T.** . . . Guess what? Your **Coleco DONKEY KONG** cart may be **24 ROM** or **32 ROM**, depending on when it was

The first rock and roll video game is coming.

produced. **Coleco** says there is no way to tell the difference and game play is not affected. If anybody knows otherwise, let me know . . . **PlayCable**, the video games TV station, has some competition. **The Games Channel** began in August in **Fullerton, CA.** It offers **Intellivision** games to subscribers for less than **PlayCable**. Adventure games are featured, some of which take months to play . . . **Coleco** thinks they're going to overtake **Intellivision** as number two, but not until next year, only because "we can't make the games fast enough". . . Six months ago I got a press release from **Fox** announcing **NEXAR**. Two days ago I got a copy of **NEXAR** . . . by **Spectravision**! It looks like **David Lubar, NEXAR** designer, took the game to **Spectra** when **Fox** didn't want it . . . Folks, the **Atari Driving Controllers** are just single **Paddles** . . . The coin-op business had a lousy summer. Manufacturers are churning out new games and the arcade owners are reluctant to buy them. Of course, summers are traditionally bad for coin-operators because everybody's on vacation . . . **CBS** and **Coleco** have signed an agreement to make home games for **ColecoVision**. Since **CBS** also recently hooked up with **Bally Midway**, we can probably expect some **Midway** arcade games in the **ColecoVision** format in 1983 . . . **LABYRINTH** and **EXCALIBUR** are new by **Starpath** . . . Who coined the phrase "**video games**"? Originally, they were called "TV games." **Ed Adlum** of **Replay** thought that was ridiculous and first referred to them as video games . . . Video jocks can join a new organization, the **American Video Athletic Association**. Write to them at: **Badger Office Building, 120 W. Mifflin, Madison, Wisconsin 53705** . . . **Atari** has won a five-year, $3,000,000 contract to supply the **Defense Department** with 1,370 home computer systems . . .**Data Age** has come up with what just might be the hottest idea in video games since **SPACE INVADERS**. And why did it take so long to think of it—**rock and roll video games!** They teamed up with **Journey** (big video fans themselves) to turn the band's latest million-seller, **ESCAPE**, into a video game. All the details next month, in the **EFG Times**. Are rock video games the next wave? I can't wait to play **STAIRWAY TO HEAVEN.**□

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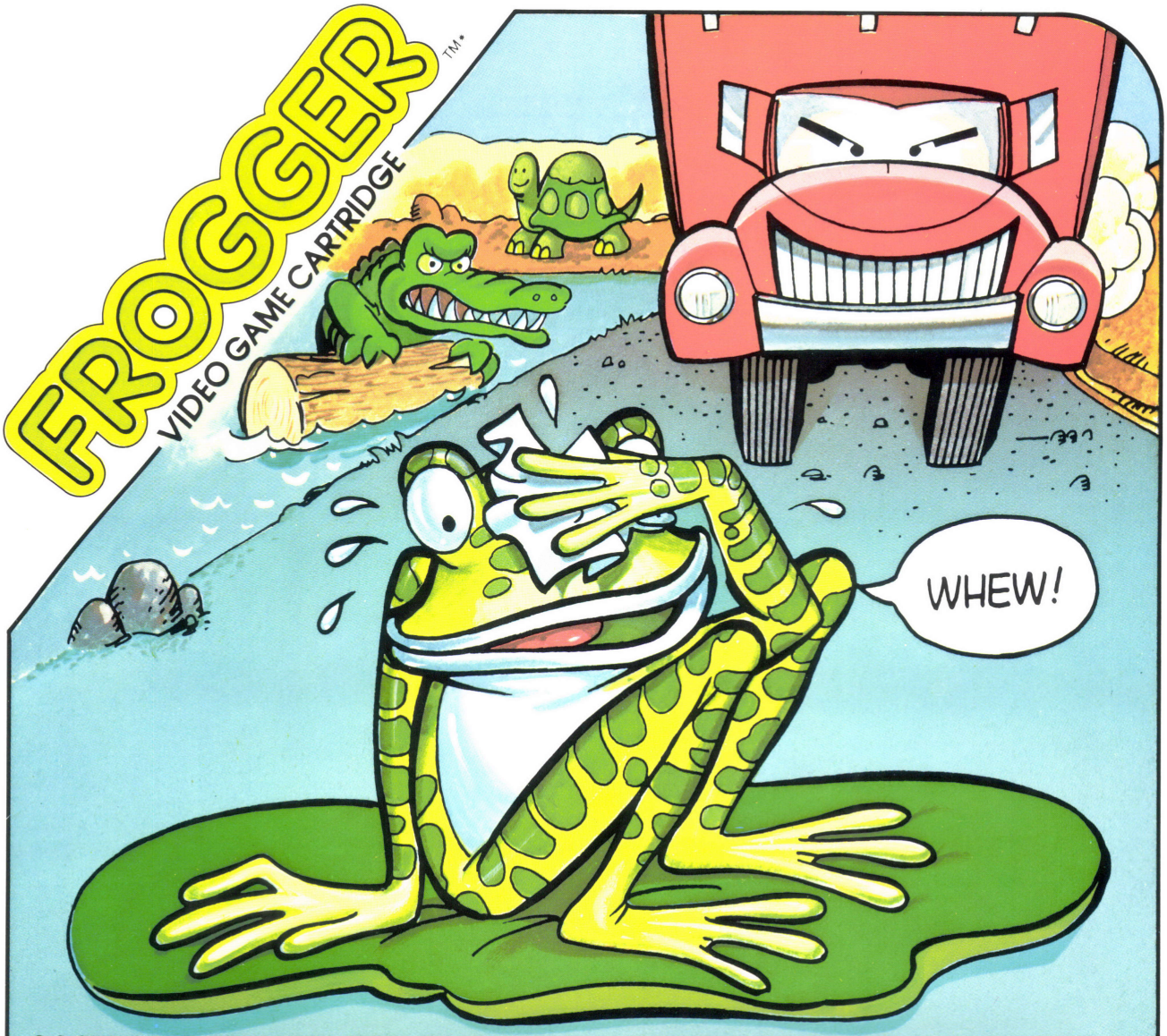

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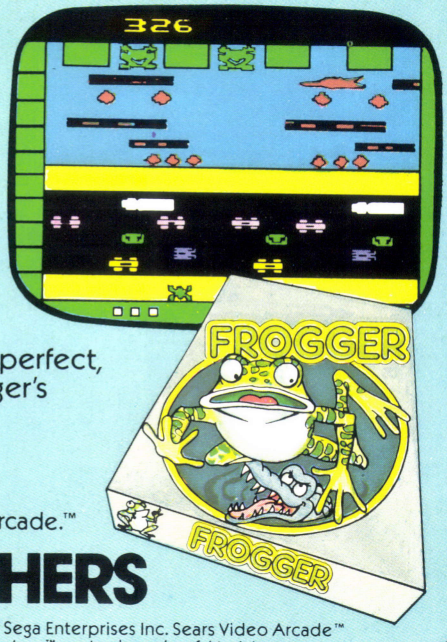
Frogger's last leap to his lily pad home must be perfect, or it's back to the road to try again. Good luck. Frogger's counting on you.



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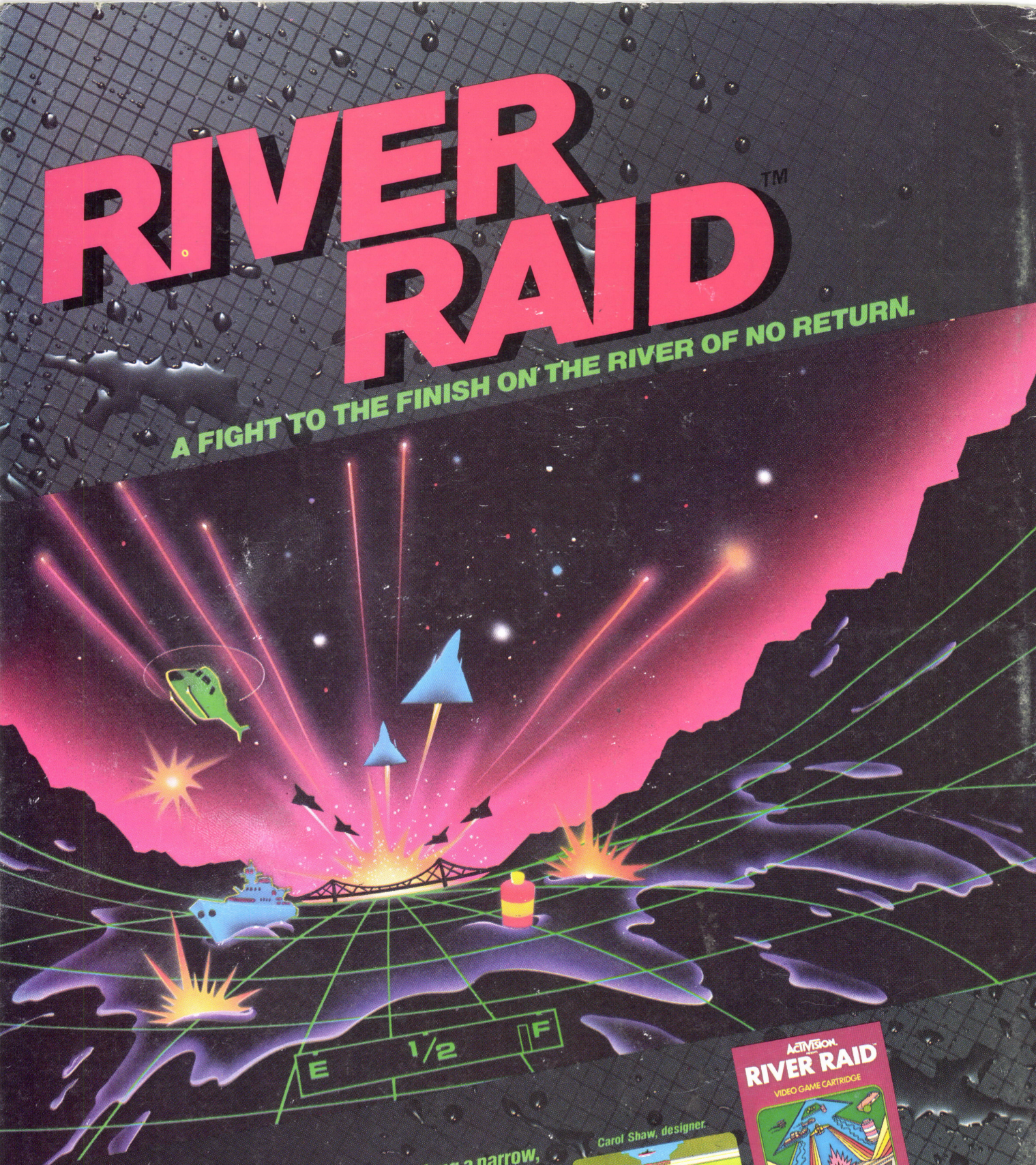

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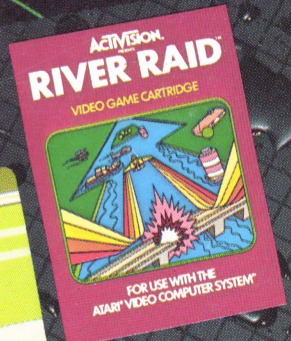

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